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# ARMY TM 11-5855-301-12&P MARINE CORPS TM 09596C-12&P/1A

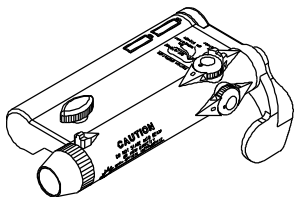
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## TECHNICAL MANUAL

### OPERATOR'S AND UNIT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

LIGHT, AIMING,  
INFRARED

AN/PAQ-4B  
(NSN 5855-01-361-1362)  
(EIC: N/A)  
AN/PAQ-4C  
(NSN 5855-01-398-4315)  
(EIC: N/A)



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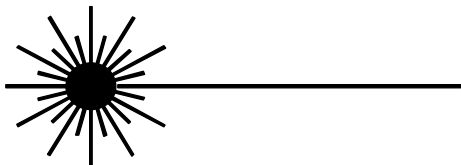
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DEPARTMENT OF THE ARMY  
AND HEADQUARTERS, MARINE CORPS  
15 May 2000

## **WARNING**

### **INVISIBLE LASER LIGHT**



The AN/PAQ-4B and AN/PAQ-4C are military lasers, and have been exempted from FDA radiation safety performance standards prescribed in the Code of Federal Regulations, Title 21, Chapter I, Subchapter J, pursuant to exemption No. 76 EL-01 DOD issued on 7-26-76. These devices must be used IAW the precautions contained in this manual.

The infrared beam is considered eyesafe based on military standards. Suitable precautions must be taken to avoid overexposure to the infrared beam.

- Do not stare into the infrared laser beam.
- Do not look into the infrared laser beam through binoculars or telescopes.
- Do not shine the infrared laser beam into mirror surfaces.
- Do not shine the infrared laser beam into other individuals' eyes.

---

## **WARNING**

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### **RISK OF DETECTION BY ENEMY**

To reduce the risk of detection by an enemy wearing NVG's (Night Vision Goggles), avoid prolonged activation of the IAL (Infrared Aiming Light) prior to firing.

---

## **WARNING**

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The infrared beam is more detectable to an enemy using NVG's when shining through smoke, fog and rain. Avoid prolonged activation of the Aiming Light in these conditions.

**OPERATOR'S AND UNIT MAINTENANCE MANUAL  
(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)  
LIGHT, AIMING, INFRARED  
AN/PAQ-4B (NSN 5855-01-361-1362) (EIC: N/A)  
AN/PAQ-4C (NSN 5855-01-398-4315) (EIC: N/A)**

Current as of 1 January 2000

**REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-LEO-MM-T, Fort Monmouth, New Jersey, 07703-5007 or your NAVMC 10772 to: Commander, Marine Corps Logistics Bases (Code 850), Albany, GA 31704-5000. The FAX number is 908-532-3421, DSN 992-3421. You may also e-mail your recommendations to AMSEL-LC-LEO-PUBS-CHG@cecom3.monmouth.army.mil. In either case a reply will be furnished direct to you.

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\*This manual supercedes TM 11-5855-301-12&P dated 1 April 1998.

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# HOW TO USE THIS MANUAL

## Usage

You must familiarize yourself with the entire manual before operating the equipment. Read the complete maintenance task before performing maintenance and follow all WARNINGS, CAUTIONS, and NOTES.

## Manual Overview

The manual contains sections for Operating Procedures, Operator Maintenance and Troubleshooting and Unit Maintenance. A list of Components of End Item can be found in Appendix D.

## Special Feature

A locator is provided on the back cover. This gives the location of the information most frequently used. To find the topic ZEROING PROCEDURES, open the manual to the correct page by using the black tab on the side of the manual that lines up with the topic ZEROING PROCEDURES.



**Figure 1-0. Light, Aiming, Infrared AN/PAQ-4B and AN/PAQ-4C.**

# CHAPTER 1 INTRODUCTION

## SECTION I GENERAL INFORMATION

### 1-1. SCOPE

#### NOTE

<p><b>ALL REFERENCES TO THE AN/PAQ-4B ALSO PERTAIN TO THE AN/PAQ-4C.</b></p>
--

**a. Type of Manual:**

Operator's and Unit Maintenance (Including Repair Parts and Special Tools List).

**b. Model Number and Equipment Name:**

Light, Aiming, Infrared, AN/PAQ-4B and AN/PAQ-4C.

**c. Purpose of Equipment:**

To direct accurate weapon fire at night without detection by the enemy.

### 1-2. CONSOLIDATED INDEX OF PUBLICATIONS AND BLANK FORMS

Refer to the latest issue of DA PAM 25-30 to determine whether there are new editions, changes or additional publications pertaining to the equipment.

Marine Corps personnel refer to the on-line MCPDS or the SL-1-2 Index of Technical Publications.

### **1-3. MAINTENANCE FORMS, RECORDS, AND REPORTS**

**a. Reports of Maintenance and Unsatisfactory Equipment.** If your equipment is performing unsatisfactorily or you are having maintenance problems, FAX DSN 992-1645, COML (732)532-1645 or call DSN 992-5271, COML (732)532-5271.

**b. Reporting of Items and Packaging Discrepancies.**

Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/ DLR 4140.55/ SECNAVINST 4355.18/ AFR 400-54/ MCO 4430.3J.

**c. Transportation Discrepancy Report (TDR) (SF 361).** Fill out and forward Transportation Discrepancy Report (TDR) (SF 361) as prescribed in AR 55-38/ NAVSUPINST 4610.33C/ AFR 75-18/ MCO P4610.19D/ DLAR 4500.15.

**d. Marine Corps Ground Equipment Record Procedures.** Marine Corps personnel refer to TM 4700-15/1 for disposition of forms and records required for the Marine Corps equipment.

### **1-4. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR).**

If your Aiming Light needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, US Army

Communications-Electronics Command, ATTN:  
AMSEL-LC-ED-CFO, Fort Monmouth, New Jersey  
07703-5000. We'll send you a reply.

## **1-5. DESTRUCTION OF ARMY ELECTRONICS MATERIEL**

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

## **1-6. WARRANTY**

a. The Infrared Aiming Lights, AN/PAQ-4B and AN/PAQ-4C delivered under the DAAB07-92-C-K254 contract are warranted by a 3-year limited manufacturer's warranty against failure due to design, workmanship, materials, or manufacturing defects. The Infrared Aiming Lights, AN/PAQ-4C delivered under the DAAB07-98-D-R309 contract are warranted by a 1-year limited manufacturer's warranty against failure due to design, workmanship, materials, or manufacturing defects. **This warranty does not protect against damage due to misuse or mishandling.** The warranty expiration date and contract number are indicated on the identification plate.

b. **Perform all PMCS, troubleshooting, and maintenance procedures before sending the system back for warranty actions.** Fill out a DA Form 2407, Maintenance Request, requesting warranty action. The form shall include the problem with the equipment, as well as the method used to determine the problem. DA Form 2407 is distributed as follows:

Copy 1 - Kept by your unit

Copies 2 & 3 - Send to: Commander, US Army CECOM, ATTN: AMSEL-LC-ED-CFO, Fort Monmouth, NJ 07703-5000

Copy 4 - Filed by your Warranty Office

Copy 5 - Stays with the equipment

You must also fill out either a DD Form 1149 or a DD Form 1348 and send it back with the equipment. On the form, you must provide the NSN, your unit's DODAAC, the Julian date, and your 4-digit unit number. In the "Mark For" section of the form, state that this is a warranty item and specify a "Condition Code" of 'L' for the system being returned.

**c. Send the system, with all COEI and BII except batteries, to:** XU Transportation Officer, Defense Dist. Depot Susquehanna, New Cumberland, PA 17070-5001GR.

**d. Points of Contact:**

## 1-7. NOMENCLATURE CROSS REFERENCE

<u>Common Name</u>	<u>Official Nomenclature</u>
AA Battery.....	Battery, non-rechargeable, Alkaline AA.
Aiming Light.....	Aiming Light Assembly.
Battery Cap.....	Cover, Battery Box.
Cable Switch.....	Cable Assembly-Switch, Electrical.
Cotton Swab .....	Applicator, Disposable.
Infrared Aiming Light.....	Light, Aiming, Infrared, AN/PAQ-4B & AN/PAQ-4C.
M2 .....	Browning, Machinegun, Caliber .50 HB, M2.
M4 .....	Rifle, 5.56 MM, M4.
M16A1 .....	Rifle, M16A1.
M16A1 Barrel Adapter .....	Clip, Spring Tension.
M16A2 .....	Rifle, 5.56 MM, M16A2.
Boresight Filter.....	Filter, Boresighting
M16/M203.....	40 MM, Grenade Launcher, M203.
M16 Mounting Bracket,.....	Bracket, Mounting.
M60 .....	Machinegun, 7.62 MM, M60.
M240G.....	Machinegun, 7.62 MM.
M249 (SAW).....	Squad Automatic Weapon (SAW), 5.56 MM, M249.
M136 (AT4).....	Launcher and Cartridge, M136 (AT4)
Optical Baffle .....	Louver, Light.
Shipping/Storage Case.....	Case, Electronic Com- munications Equipment.

## 1-8. LIST OF ABBREVIATIONS

AAI .....	Additional Authorized Item
BII.....	Basic Issue Item
C.....	Celsius (Centigrade)
CCW.....	Counter-clockwise
cm .....	Centimeters
COEI.....	Components of End Item
CW .....	Clockwise
F .....	Fahrenheit
IAL.....	Infrared Aiming Light
IAW .....	In accordance with
in .....	Inches
max .....	Maximum
MFR.....	Manufacturer
mrad .....	Milliradians
NVG's .....	Night Vision Goggles
No.....	Number
Para.....	Paragraph
PMCS .....	Preventive Maintenance Checks and Services
Qty.....	Quantity
Rcvd .....	Received
RPSTL.....	Repair Parts and Special Tools List
Rqd.....	Required
SAW .....	Squad Automatic Weapon



## **1-9. GLOSSARY**

Aiming Point	The place to put the infrared spot on the target.
Axis	The line of the infrared light beam.
Azimuth	Horizontal (left-right) movement. Also called windage.
Caution	Conditions, practices, or procedures that must be observed to avoid damage to equipment, destruction of equipment or a long-term health hazard.
Designated Strike Point	Desired point of impact on the target when the aiming light spot is on the Aiming Point.
Designated Strike Zone	Region around the Designated Strike Point where bullets will hit when the Aiming Light is properly aligned to the Aiming Point.
Detent	Notch providing clicking action.
Elevation	Vertical (up-down) movement.

Mounting Groove	The recessed area on the underside of the Aiming Light where Brackets attach.
Neutral Position	The initial setting of the adjusters for zeroing procedures. In this position the beam is mechanically centered to the Aiming Light mounting groove.
Note	Essential information of special importance, interest, or aid in job performance.
Off-Axis	Anywhere not along the direct line of the light beam.
Warning	Conditions, practices, or procedures that must be observed to avoid personal injury or loss of life.
Zeroing	Aligning the Aiming Light to the desired target at a particular range.

## **SECTION II.**

### **EQUIPMENT DESCRIPTION**

#### **1-10. EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES**

##### **a. Characteristics of the Aiming Light.**

The Aiming Light is used in conjunction with NVGs to direct weapon fire at night. The Aiming Light projects a pulsating infrared beam (AN/PAQ-4B) or a continuous infrared beam (AN/PAQ-4C) along the weapon's line of fire designating the point of impact on the target.

##### **b. Capabilities and Features.**

The Infrared Aiming Light has the following features:

- Aiming Light beam visible with NVG's only.
- Mounts to M16A1/A2, M16/M203, M4, M2, M60, M240G, M249, and M136 (AT4) weapon systems.
- Battery powered.
- Can be used in extreme cold to -65°F (-54°C).
- Can be used in extreme heat to 124°F (51°C).
- Momentary ON operation only, when mounted on M16A1, M16A2, M16/M203, M4, and M249 weapons.
- Constant ON capability when mounted on M2, M60, and M136 (AT4) weapons.
- Cable switch capability for remote actuation.
- Effective range is limited to maximum range of NVG's.

## **1-11. LOCATION AND DESCRIPTION OF MAJOR COMPONENTS (Fig. 1-2)**

**a. Thumbscrew Assembly.** The Thumbscrew assembly includes a metal thumbscrew and conical washer which attach the Aiming Light to its mounting brackets. The Thumbscrew is captive to prevent it from falling out of the Aiming Light. It can be deliberately removed by unscrewing in a CCW direction.

**b. Retaining Strap.** The Retaining Strap prevents the Battery Cap from being accidentally lost.

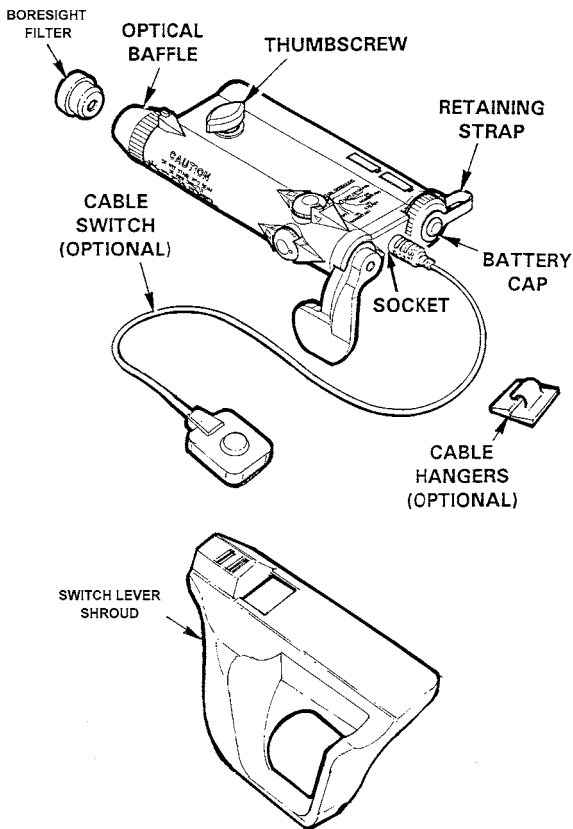
**c. Battery Cap.** The Battery Cap is attached to the body of the Aiming Light by a Retaining Strap to prevent its loss. The battery cap seals the battery compartment and provides electrical contact.

**d. Cable Switch and Cable Hangers.** The Cable Switch provides optional remote operation of the Aiming Light on certain weapons. The Cable Switch plugs into a socket at the rear center of the Aiming Light. Cable Hangers attach to the weapon to secure the cable and avoid snagging.

**e. Optical Baffle.** The Optical Baffle is screwed onto the front of the Aiming Light. This baffle reduces off-axis detection of the Aiming Light by the enemy.

**f. Boresight Filter.** The boresight filter is screwed onto the optical baffle to minimize the effects of laser bloom during zeroing.

**g. Switch Lever Shroud.** The switch lever shroud is used to protect the switch lever from accidental activation and damage when the aiming light is mounted to the M16A2.



**Figure 1-2. Location of Major Components.**

## **1-12. EQUIPMENT DATA**

### **WEIGHT AND DIMENSIONS**

Weight (with two AA Batteries)	164 grams (5.78 oz).
--------------------------------	----------------------

Length	14 cm. (5.5 in.)
--------	------------------

Width	6.5 cm. (2.5 in.)
-------	-------------------

Height	3 cm. (1.2 in.)
--------	-----------------

### **PERFORMANCE**

Range	Beyond 600 meters. Actual range depends on light levels and night vision device used for observation.
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Battery Life	100 hours operating (ON) time for AA Batteries in temperatures above 0°C (32°F).
--------------	--

	36 hours for temperatures below 0°C (32°F).
--	---

Reliability	30,000 eleven second cycle operations before failure.
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## **SECTION III.**

### **PRINCIPLES OF OPERATION**

#### **1-13. GENERAL FUNCTIONAL DESCRIPTION**

The Aiming Light projects an infrared laser beam which cannot be seen with the eye but can be seen with NVG's. The Aiming Light mounts on various weapons with Mounting Brackets and adapters.

The Aiming Light is activated by pressing on either the ON/OFF Switch lever, or the button on the optional Cable Switch. Either switch connects power from two AA Batteries to an internal electronic circuit which produces the infrared laser. Internal lenses focus the infrared light into a narrow beam.

The direction of the beam is controlled by rotating the mechanical Adjusters with click detents. These adjusters are used to zero the Aiming Light to the weapon. Once zeroed to the weapon, the Aiming Light projects the beam along the line of fire of the weapon. The Optical Baffle prevents off-axis viewing of the Aiming Light beam by the enemy.



## **CHAPTER 2**

### **OPERATING INSTRUCTIONS**

#### **SECTION I.**

#### **DESCRIPTION AND USE OF OPERATOR'S CONTROLS, INDICATORS AND BRACKETS**

##### **2-1. GENERAL**

This section contains a brief description of the adjusters, ON/OFF switch, optional cable switch and brackets for each weapon.

##### **2-2. AIMING LIGHT CONTROLS AND INDICATORS**

###### **a. Adjusters (Figure 2-1).**

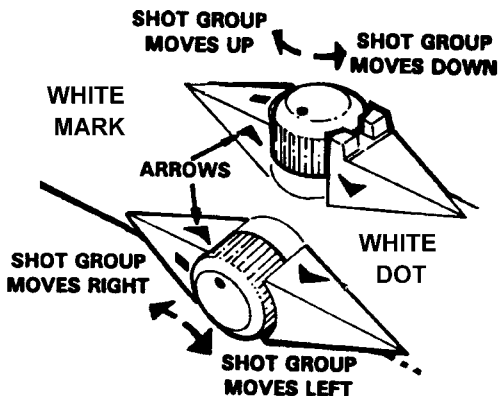
Adjusters enable the Aiming Light to be zeroed to the weapon. Adjuster movement has audible and tactile clicks. When mounted on the weapon, each click moves the shot group 0.4 inches at 25 meters (0.4 mrad). This equals one square on a M16A2 25 meter zeroing target.

The Marine Corps zeros the Aiming Light at 30 meters. When mounted on the weapon each click moves the shot group 0.5 inches.

The arrow printed on the flange on either side of the adjuster knobs indicates the direction of shot group movement (Figure 2-1).

To move the shot group in the direction of the arrow, place a finger on the side of the adjuster knob between the arrows and rotate the knob in the direction which moves the finger towards the arrow.

At the full clockwise end of travel of either adjuster, the adjuster becomes harder to turn and the white dot on the adjuster knob will align within 2 clicks of the white mark on the knob's front flange.



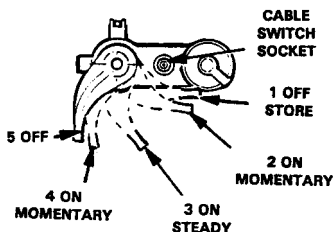
**Figure 2-1. Adjuster Rotation and Shot Group Movement.**

**b. ON/OFF Switch (Figure 2-2)**

The ON/OFF switch has five positions (Table 2-1). The label printed on top of the Aiming Light only shows the switch function location, not the position number.

**Table 2-1. Switch Positions**

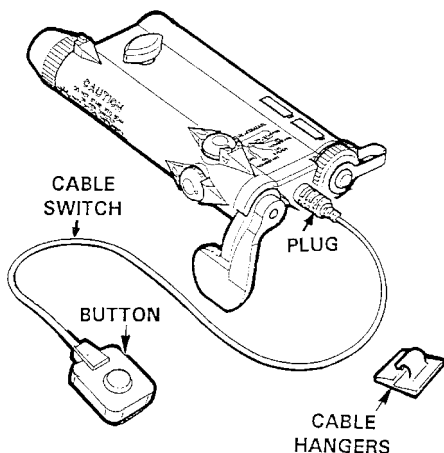
<b>Position</b>	<b>Function</b>	<b>Used for Weapons</b>
1	OFF/ STORAGE	M2, M4, M60, M249, M16/M203, M136
2	ON MOMENTARY	M249, M4, M16/M203
3	ON STEADY	M2, M60, M136.
4	ON MOMENTARY	M16A1/A2
5	OFF	M16A1/A2



**Figure 2-2. Aiming Light Switch (Rear View).**

### c. Cable Switch (Figure 2-3).

The Cable Switch provides momentary "ON" operation for the Aiming Light when mounted on selected weapons. The ON/OFF Switch must be in the OFF (#1 or #5) position (Figure 2-2) for the button on the Cable Switch to properly activate the Aiming Light. Cable Hangers are provided for securing the cable to the weapon.



**Figure 2-3. Cable Switch location.**

## **2-3 MOUNTING BRACKETS AND ADAPTERS.**

### **a. The M4/M16A2 Mounting Bracket (Figure 2-4).**

The M4/M16A2 Mounting bracket mounts the Aiming Light to the M4/M4A1 Carbine and the M16A2 rifle.

The caps secure the bottom bracket to the rifle barrel under the handguard. A socket head screw key (3mm Allen Wrench) is used to tighten the 4 screws that secure the caps to the bottom bracket.

Once the handguard is replaced, the top bracket is secured to the bottom using the two countersink screws.

The shroud is placed over the top bracket and the Aiming Light is secured to the bracket assembly with the thumbscrew.

### **b. Alternate M16 Mounting Bracket (Figure 2-4.1).**

The alternate M16 Mounting Bracket mounts the Aiming Light to the M16A1/A2 and the M16/M203 weapons.

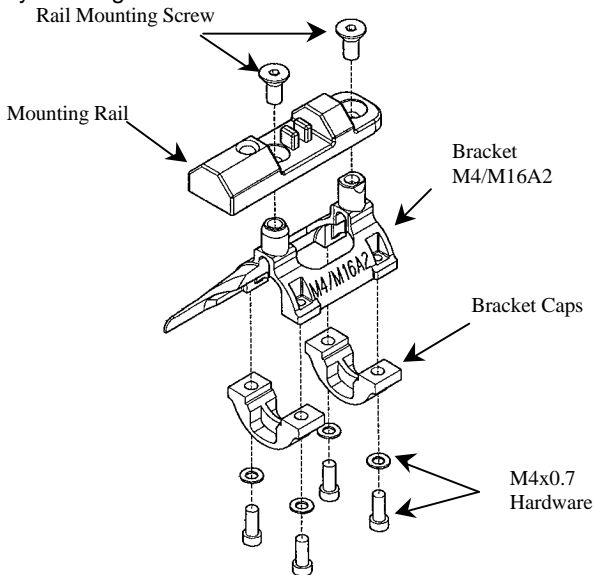
The bracket mounting rail mates with the Aiming Light's mounting groove and is secured with the thumbscrew.

The cutout is used to surround the front iron sight when mounting to the M16A1/A2 rifles.

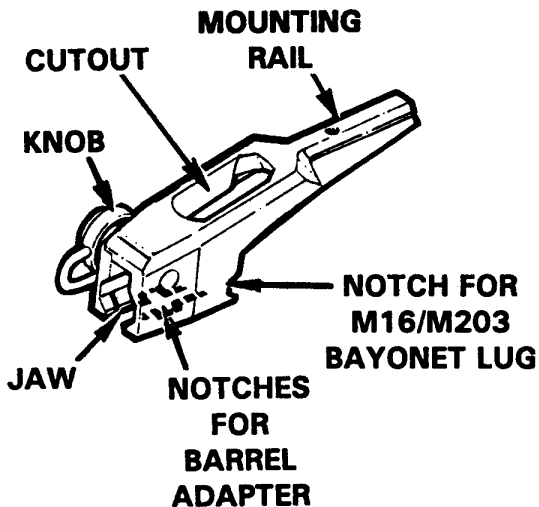
The bracket knob is used to clamp the jaws to the weapon barrel.

The jaw notches are used to engage the M16A1 Barrel Adapter for M16A1 mounting only.

The notch in the side of the bracket engages the Bayonet Lug on the M16/M203.



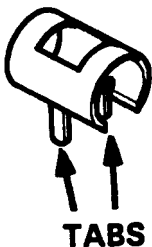
**Figure 2-4. M4/M16A2 Mounting Bracket.**



**Figure 2-4.1. Alternate M16 Mounting Bracket.**

**c. The M16A1 Barrel Adapter (Figure 2-5).**

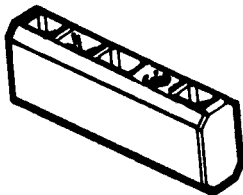
This Adapter fits between the M16 Mounting Bracket and the narrow barrel of the M16A1 rifle. The two tabs align and secure the Adapter into the Bracket jaws.



**Figure 2-5. M16A1 Barrel Adapter.**

**d. Bracket Adapter (Figure 2-6)**

This adapter provides compatibility between the Aiming Light and the mounting brackets used on the M2, M60 and M136 (AT4) weapons.

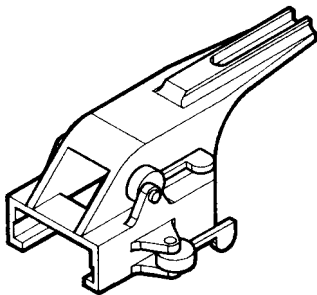


**Figure 2-6. Bracket Adapter.**



**e. M2 Mounting Bracket (Figure 2-7).**

This bracket mounts to the M2, positioning the Aiming Light horizontally on the top of the weapon.

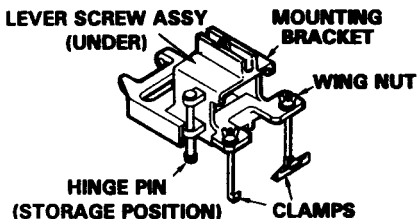


**Figure 2-7. M2 Mounting Bracket.**

**f. "Deleted"**

**g. M60 Mounting Bracket (Figure 2-9).**

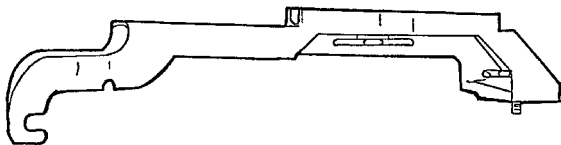
This bracket positions the Aiming Light horizontally on top of the M60, using the Bracket Adapter.



**Figure 2-9. M60 Mounting Bracket.**

**h. M249 Mounting Bracket (Figure 2-10).**

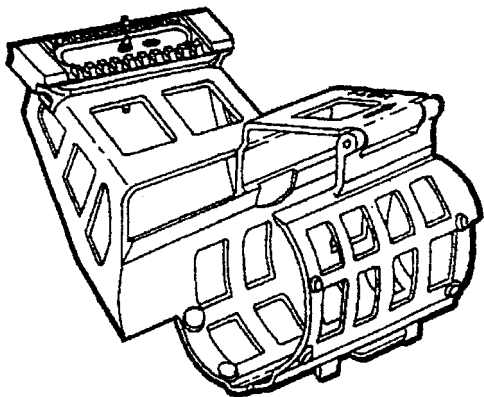
This bracket positions the Aiming Light vertically over the feed tray cover of the M249 SAW. The bracket engages the feed tray forward hinge posts, and is secured by the rear wing nut.



**Figure 2-10. M249 Mounting Bracket.**

## **i. M136 (AT4) Mounting Bracket Assembly (Figure 2-10.1).**

This bracket positions the Aiming Light horizontally on the left side of the M136 (AT4) Launcher and Cartridge. The bracket clamps to the M136 (AT4) launcher between the base of the rear sight housing and shoulder strap boss. The bracket is secured by rotating the locking latch clockwise to engage the latch shoulder shaft.



**Figure 2-10.1. M136 (AT4) Mounting Braacket Assembly**

## **SECTION II.**

### **OPERATOR PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

#### **2-4. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS).**

**a. General.** Table 2-2 (PMCS table) has been provided so you can keep your equipment in good operating condition and ready for its primary mission.

**b. Warnings and Cautions.** Always observe the WARNINGS and CAUTIONS appearing in your PMCS table. Warnings and Cautions appear before applicable procedures. You must observe these WARNINGS and CAUTIONS to prevent serious injury to yourself and others and prevent your equipment from being damaged.

#### **c. Explanation of table entries.**

**(1) Item number column.** Numbers in this column are for reference. When completing DA Form 2404 (Equipment Inspection and Maintenance Worksheet), include the item number for the check/service indicating a fault. Item numbers also appear in the order that you must do checks and services for the intervals listed.

(2) Interval column. This column tells you when you must do the procedure in the procedure column. BEFORE procedures must be done before you operate or use the equipment for its intended mission. DURING procedures must be done during the time you are operating or using the equipment for its intended mission. AFTER procedures must be done immediately after you have operated or used the equipment.

(3) Location, check/service column. This column provides the location and the item to be checked or serviced. The item location is underlined.

(4) Procedure column. This column gives the procedure you must do to check or service the item listed in the Check/Service column to know if the equipment is ready or available for its intended mission or for operation. You must do the procedure at the time stated in the interval column.

(5) Not fully mission capable if: column. Information in this column tells you what faults will keep your equipment from being capable of performing its primary mission. If you make check and service procedures that show faults listed in this column, do not operate the equipment. Follow standard operating procedures for maintaining the equipment or reporting equipment failure.

**d. Other table entries.** Be sure to observe all special information and notes that appear in your table.

Table 2-2. Preventive Maintenance Checks and Services.

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/ SERVICE		
1	Before	<u>Aiming Light</u> Exterior	Check for cracks in body or Battery Cap	Cracked body Cracked Battery Cap
2	Before	Battery Compartment	Check for corrosion, leaks.	Corroded or broken contacts.
3	Before	Adjusters	Check for broken, cracked or jammed Adjusters.	Adjusters broken, cracked or jammed.
4	Before	Thumbscrew	Check for broken Thumbscrew	Thumbscrew broken

**Table 2-2. Preventive Maintenance Checks and Services (continued).**

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/ SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
5	Before	<b>Mounting Bracket</b>	Check for bent, corroded, cracked or missing components	Bent, cracked, missing components.
<p style="text-align: center;"><b>WARNING</b> DO NOT STARE DIRECTLY INTO INFRARED LIGHT BEAM. USE YOUR NVG'S.</p>				
6	Before	ON/OFF Switch & Beam Spot	Operate ON/OFF Switch in dark area and observe beam spot on wall with NVG's.	ON/OFF Switch Inoperative. Beam Spot not visible with NVG's.
7	During	<b><u>Aiming Light,</u></b> <b>Mounting Bracket</b>	Check that Thumbscrew and Bracket Knob are securely tightened.	Aiming Light or bracket not securely fastened to weapon.

Table 2-2. Preventive Maintenance Checks and Services (continued).

ITEM NO.	INTERVAL	LOCATION ITEM TO CHECK/ SERVICE	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
8	After	<u>Aiming Light</u> Exterior	Check for cracks in body, retaining strap, or Battery Cap	Cracked body Cracked Battery Cap
9	After	Battery Compartment	Remove Batteries. Check for corrosion.	Corroded or broken contacts.
10	After	Adjusters	Check for broken, cracked or jammed Adjusters.	Adjusters broken, cracked or jammed.
11	After	Cable Switch Plug Socket and Optical Baffle	Check for mud or dirt.	Mud or dirt degrades performance.



**Table 2-2. Preventive Maintenance Checks and Services (continued).**

ITEM NO.	INTERVAL	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
		ITEM TO CHECK/ SERVICE		
WARNING				
DO NOT STARE DIRECTLY INTO INFRARED LIGHT BEAM. USE YOUR NVG'S.				
12	After	ON/OFF Switch & Beam Spot	Operate ON/OFF Switch in dark area and observe beam spot on wall with NVG's.	ON/OFF Switch Inoperative. Beam Spot not visible with NVG's.
13	After	<b><u>Mounting Bracket</u></b>	Check for bent, corroded, cracked or missing components	Bent, cracked, missing components.
14	After	<b><u>Textile Bag</u></b>	Check for torn fabric, broken or missing clips	

# **SECTION III.**

## **OPERATION UNDER USUAL CONDITIONS**

### **2-5. ASSEMBLY AND PREPARATION FOR USE**

#### **NOTE**

The M249, M60, M2, M16A2 and M136 (AT4) Mounting Brackets are Additional Authorized Items (AAI). Refer to Appendix E.

#### **a. Unpacking Instructions.**

(1) Open the Textile Bag, remove and verify that all components are present (Figure 2-11).

(2) Check that the Optical Baffle, Thumbscrew, and Battery Cap with Retaining Strap are attached to the Aiming Light.

#### **b. Installation of Batteries (Figure 2-12).**

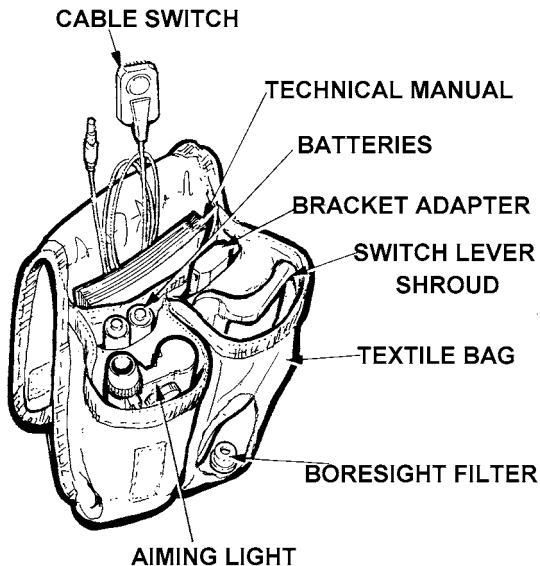
(1) Move the ON/OFF Switch to the #5 OFF (vertical) position (Figure 2-2).

(2) Unscrew the Battery Cap.

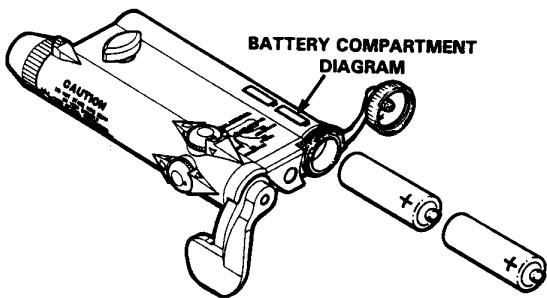
(3) Install two fresh AA Batteries in the direction shown on the battery compartment diagram (Figure 2-12)

(4) Secure the Battery Cap.

(5) Return ON/OFF Switch to position #1 OFF/STORAGE (Figure 2-2).



**Figure 2-11. Location of Components.**



**Figure 2-12. Installation of Batteries.**

## **2-6. INITIAL ADJUSTMENT.**

Initial adjustment consists of setting the adjusters to the neutral position.

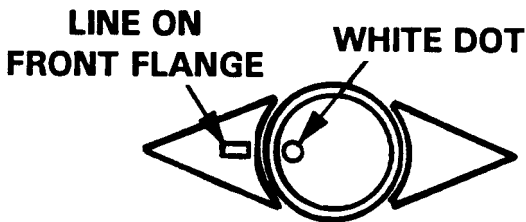
### **CAUTION**

- To prevent jamming, do not force the adjusters to rotate past their end of travel.
- Do not use tools to rotate adjuster knobs.

## NOTE

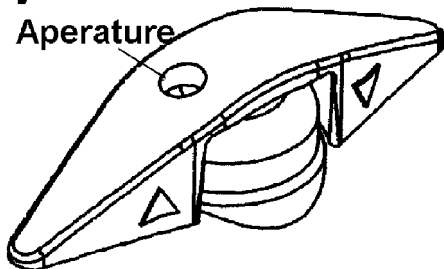
Neutral position must be set before beginning the zeroing procedure.

- a. Turn each adjuster CW to the end of travel.
- b. Rotate each adjuster back exactly three turns CCW, and align the white dot with the line on the front flange (Figure 2-13). If have an AN/PAQ-4C with adjuster covers (Figure 2-13.1) rotate each adjuster back exactly three turns CCW from end of travel, and align the white dot with the aperature in the cover.



**Figure 2-13. Adjuster Alignment.**

**Adjuster Cover  
Aperature**



**Figure 2-13.1. Adjuster Alignment.**

## **2-7. MOUNTING PROCEDURES.**

The following procedures describe how to mount brackets to weapons and aiming light to brackets.

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### **WARNING**

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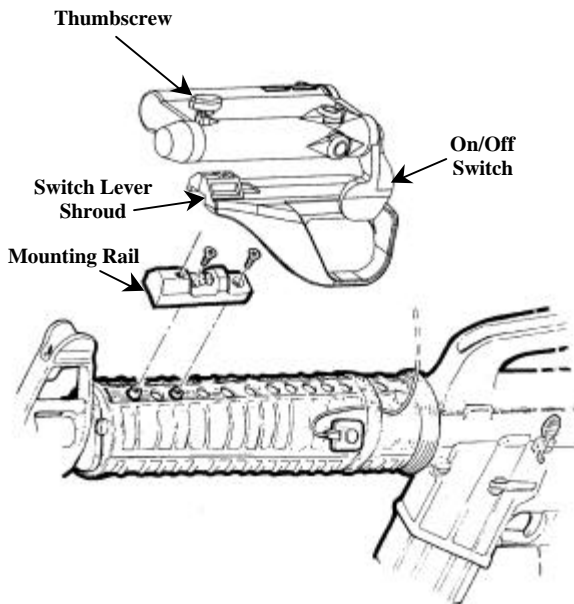
Make sure the weapon is CLEAR and on SAFE before proceeding.

#### **a. M16A2 Bracket Mounting Procedure (Figure 2-14).**

### **NOTE**

Only Small Arms Repairman MOS 2111, 45B (Army) are authorized to install the bracket. (See paragraph 4-10i). After the bracket is installed the Aiming Light is mounted as follows

- (1) Place switch lever shroud over mounting rail.
- (2) Rotate the Aiming Light ON/OFF Switch CW to the #5 OFF (vertical) position (Figure 2-2).
- (3) Position the Aiming Light on the mounting rail and secure with thumbscrew (hand tight).



**Figure 2-14. Installation on M16A2**



**b. M16A1 and alternate M16A2 Mounting Procedure (Figure 2-14.1).**

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

The Aiming Light mounts on the M16A2 rifle using the M16 Mounting Bracket .

**NOTE**

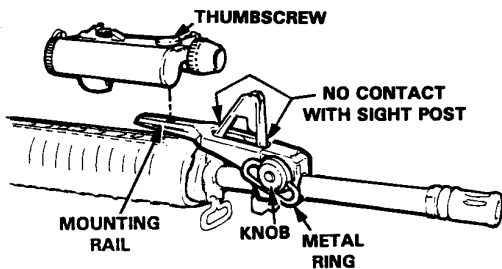
On the M16A1 rifle, first attach the M16A1 Barrel Adapter to the barrel to compensate for the smaller diameter of this barrel. When attaching the M16 Mounting Bracket over the Barrel Adapter, make sure that the tabs on the adapter engage the cutouts on the bracket jaws.

**(1)** Fully loosen the bracket knob and position the M16 Mounting Bracket on the rifle, so that the bracket jaws clamp around the barrel and the front sight post fits through the bracket's cut out.

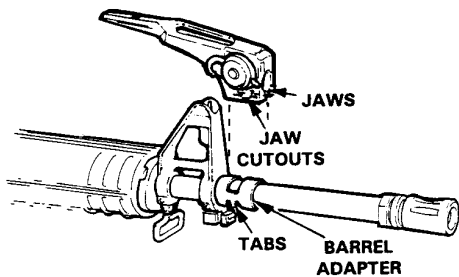
## **NOTE**

Before clamping the bracket to the barrel, make sure that the front sight post is not in contact with the bracket.

- (2)** Hand tighten the bracket knob to clamp the bracket to the barrel. Fold down the metal ring.
- (3)** Rotate the Aiming Light ON/OFF Switch CW to the #5 OFF (vertical) position (Figure 2-2).
- (4)** Position the Aiming Light on the bracket mounting rail. Hand tighten the Thumbscrew to secure the Aiming Light.



**M16A2**



**M16A1**

**Figure 2-14.1. Installation on M16A1 and M16A2.**

**c. M16/M203 & M4/M203 Mounting Procedure (Figure 2-15). (Army)**

On the M16/M203, the Bracket Adapter and AN/PVS-4 Mounting Screw are used to secure the Aiming Light to the carrying handle.

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

- (1) Position the Bracket Adapter on the carrying handle and secure with mounting screw. Hand Tighten
- (2) Position and secure the Aiming Light to the Bracket adapter. Hand tighten the Thumbscrew to secure the Aiming Light.



**Figure 2-15. M16/M203 Installation.**

**d. M16/M203 Mounting Procedure (Figure 2-15).  
(Marines)**

On the M16/M203, the M16/M203 Bracket is used to secure the Aiming Light to the barrel.

---

**WARNING**

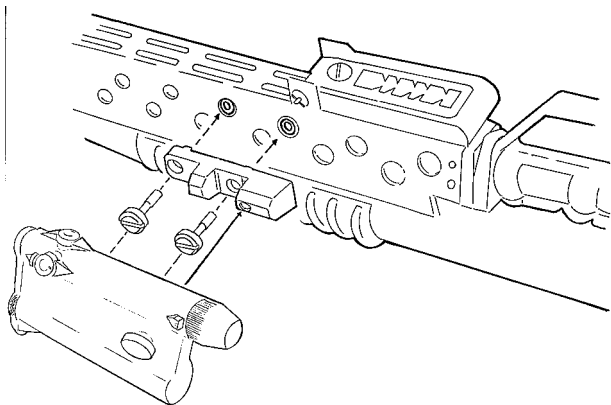
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Make sure the weapon is CLEAR and on  
SAFE before proceeding.

**NOTE**

Only Small Arms Repairman MOS 2111, 45B  
(Army) are authorized to install the bracket. (See  
paragraph 4-10m). After the bracket is installed the  
Aiming Light is mounted as follows

- (1)** Position and secure the Mounting rail to the mounting posts using the two mounting screws. Hand tighten.
- (2)** Position and secure the Aiming Light to the Mounting Rail. Hand tighten the Thumbscrew to secure the Aiming Light.



**Figure 2-15.1 M16/M203 Installation.**

**e. M4 Bracket Mounting Procedure (Figure 2-16).**

The M4/M16A2 Mounting Bracket clamps to the barrel of the M4.

---

**WARNING**

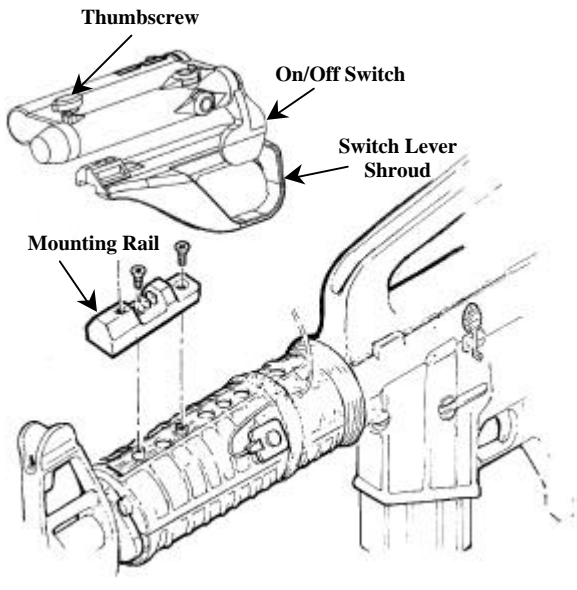
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Make sure the weapon is CLEAR and on SAFE before proceeding.

**NOTE**

Only Small Arms Repairman MOS 2111, 45B (Army) are authorized to install the bracket. (See paragraph 4-10k). After the bracket is installed the Aiming Light is mounted as follows

- (1) Place switch lever shroud over mounting rail.
- (2) Rotate the Aiming Light ON/OFF Switch CW to the #5 OFF (vertical) position (Figure 2-2).
- (3) Position the Aiming Light on the bracket mounting rail. Hand tighten the Thumbscrew to secure the Aiming Light.



**Figure 2-16. M4 Installation.**



**f. M4 Modular Weapon System (MWS) Mounting Procedures using Standard Rail Grabber Bracket (Figure 2-17).**

The Aiming Light is mounted on the front left-hand guard rail using the standard rail grabber bracket

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

**NOTE**

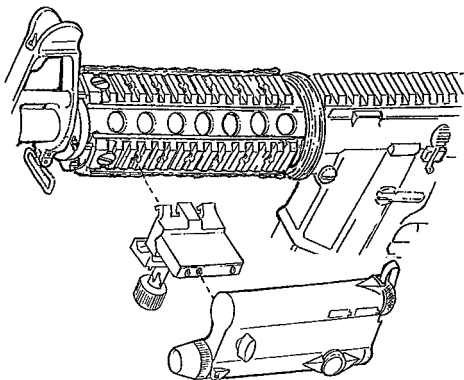
The Aiming Light may be placed at whichever position on the left side rail is most convenient for the operator. If, however, the Aiming Light is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

**(1)** Loosen the clamping knob until the rail grabber has sufficient space to fit over the left side rail. Tighten the clamping knob until a clicking sound is heard.

**(2)** Turn the ON/OFF Switch CCW to the #1 OFF/STORAGE position (Figure 2-2).

(3) Position the Aiming Light on the bracket mounting rail. Hand tighten the Thumbscrew to secure the Aiming Light.

(4) Install the remote switch in a convenient location using the provided cable hangers .



**Figure 2-17 Standard Rail Grabber Installation on MWS Left Side.**

**g. M4 Modular Weapon System (MWS) Mounting Procedures using Insight Rail Grabber Bracket (Figure 2-17.1).**

The Aiming Light is mounted on the front left-hand guard rail using the Insight rail grabber bracket when it is desired to keep the Aiming Light as close as possible to the barrel.

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

**NOTE**

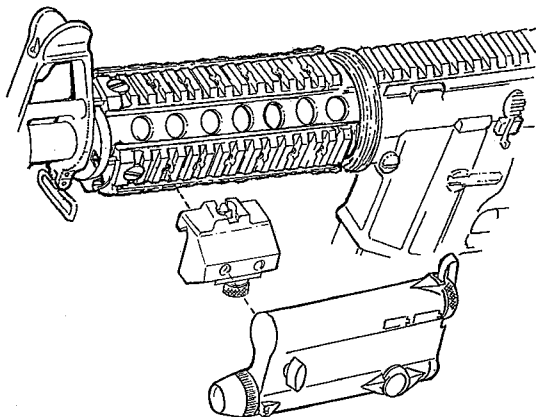
The Aiming Light may be placed at whichever position on the left side rail is most convenient for the operator. If, however, the Aiming Light is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

**(1)** Loosen the clamping knob until the rail grabber has sufficient space to fit over the left side rail. Hand Tighten the clamping knob.

**(2)** Turn the ON/OFF Switch CCW to the #1 OFF/STORAGE position (Figure 2-2).

(3) Position the Aiming Light on the bracket mounting rail. Hand tighten the Thumbscrew to secure the Aiming Light.

(4) Install the remote switch in a convenient location using the provided cable hangers .



**Figure 2-17.1 Insight Rail Grabber Installation on MWS Left Side.**

**h. M4 Modular Weapon System (MWS) Mounting Procedures using Insight Rail Grabber Bracket on Top (Figure 2-17.2).**

The Aiming Light is mounted on the top hand guard rail using the Insight rail grabber bracket when it is desired to keep the Aiming Light on the top of the barrel without obscuring the front sight post.

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

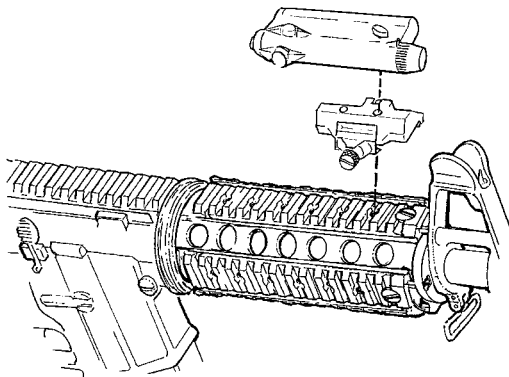
**NOTE**

The Aiming Light may be placed at whichever position on the top rail is most convenient for the operator. If, however, the Aiming Light is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

- (1)** Loosen the clamping knob until the rail grabber has sufficient space to fit over the top rail. Hand Tighten the clamping knob.
- (2)** Turn the ON/OFF Switch CCW to the #5 OFF position (Figure 2-2).

(3) Position the Aiming Light on the bracket mounting rail. Hand tighten the Thumbscrew to secure the Aiming Light.

(4) If remote operation is desired Install the remote switch in a convenient location using the provided cable hangers .



**Figure 2-17.2 Insight Rail Grabber Installation on MWS Top.**

#### **i. M249 Mounting Procedure (Figure 2-18).**

The Aiming Light mounts vertically on the top of the M249 Squad Automatic Weapon (SAW) using the AN/PVS-4 Mounting Bracket and Bracket Adapter.

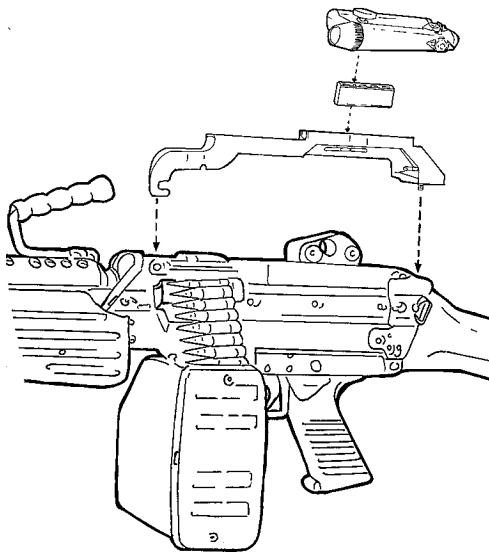
---

#### **WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

- (1)** Secure the AN/PVS-4 Mounting Bracket and Bracket Adapter to the M249 per the instructions provided in the the AN/PVS-4 Technical Manual.
- (2)** Turn the ON/OFF Switch CCW to the #1 OFF/STORAGE position (Figure 2-2).
- (3)** Position the Aiming Light on the bracket adapter. Hand tighten the Thumbscrew to secure the Aiming Light.
- (4)** Install the remote switch in a convenient location using the provided cable hangers .



**Figure 2-18. M249 SAW Installation.**



**j. M249 (Rail Equipped) Mounting Procedure (Figure 2-18.1).**

The Aiming Light mounts on the top of the mounting rail equipped M249 Squad Automatic Weapon (SAW) using the Insight Rail Grabber Bracket.

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

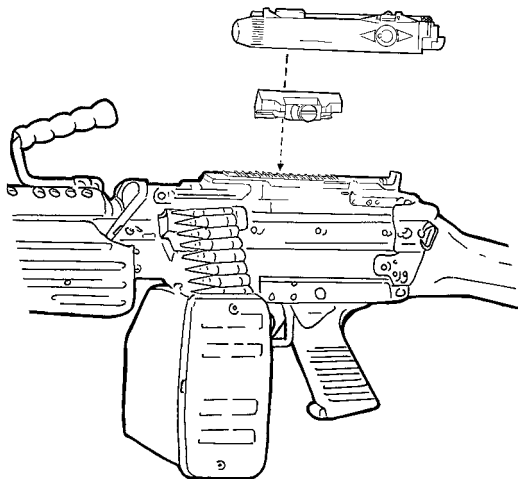
**NOTE**

The Aiming Light may be placed at whichever position on the top rail is most convenient for the operator. If, however, the Aiming Light is removed from the rail the operator must take note of the position at which the device was zeroed, and return the device to that same position in order to insure that zero is retained.

- (1)** Loosen the clamping knob until the rail grabber has sufficient space to fit over the top rail. Hand Tighten the clamping knob.
- (2)** Turn the ON/OFF Switch CCW to the #1 OFF/Storage position (Figure 2-2).

**(3)** Position the Aiming Light on the bracket mounting rail. Hand tighten the Thumbscrew to secure the Aiming Light.

**(4)** Install the remote switch in a convenient location using the provided cable hangers.



**Figure 2-18.1 Rail Equipped M249 SAW Installation.**

**k. M60 Mounting Procedure (Figure 2-19) (Army Only).**

The Aiming Light mounts on the M60 Machine Gun using the M60 Mounting Bracket and the Bracket Adapter.

---

**WARNING**

---

Make sure the weapon is CLEAR and on  
SAFE before proceeding.

**(1)** Remove the M60 hinge pin latch and hinge pin from the cover assembly by pressing on the latch (open end of pin) with an empty cartridge case and separate the latch and pin. Place the pin latch in the aiming guides on the left side of the Mounting Bracket and press together (Figure 2-9).

**(2)** Place the Mounting Bracket on top of the machine gun cover so that the holes in the front of the bracket align with the cover assembly pin holes (Figure 2-19).

**(3)** Insert the longer hinge pin supplied with the bracket through the bracket and cover assembly and secure by inserting the hinge pin latch.

**(4)** Loosen the wing nuts on both leg clamps and position the leg clamps under the cover assembly. Secure the Mounting Bracket by tightening the wing nuts firmly.

## NOTE

The split washer should be next to the wing nut and the flat washer next to the bracket.

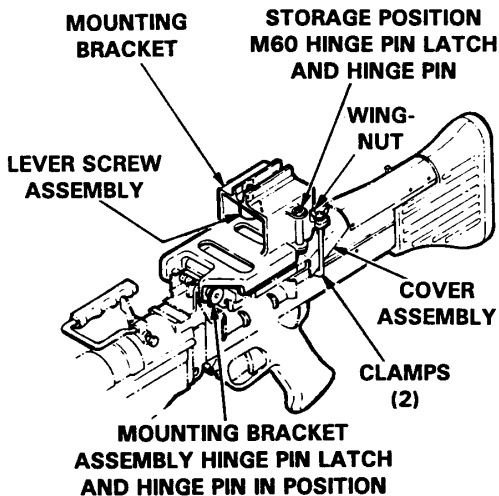
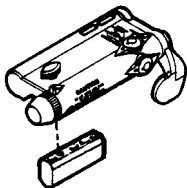


Figure 2-19. M60 Mounting.

**(5)** Place the Bracket Adapter in the Aiming Light mounting groove flush with the front of the Aiming Light (Figure 2-20). Hand tighten the Thumbscrew.



**Figure 2-20. Attaching Bracket Adapter to Aiming Light.**

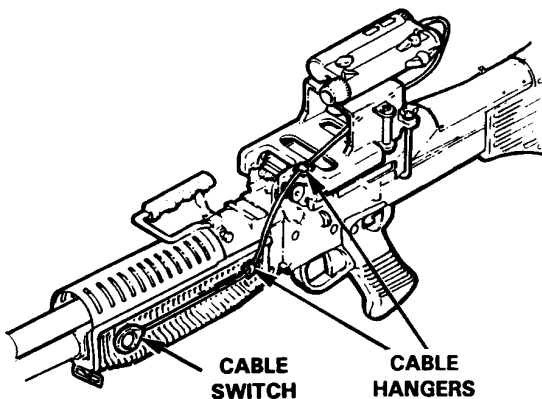
**(6)** Position the Aiming Light with Bracket Adapter onto the M60 Mounting Bracket mounting groove. Align the front edge of the Bracket Adapter and front edge of the groove. Hand tighten the lever screw assembly.

**(7)** For Aiming Light momentary operation, connect the Cable Switch to the rear of the Aiming Light .

## **WARNING**

Route the Cable so it does not interfere with any moving parts on the weapon, does not block ammunition feed or ejection ports and doesn't get snagged by branches.

- (8) Route and secure the Cable Switch as shown in Figure 2-21 using Cable Hangers (or adhesive tape) to secure the cable to the weapon.



**Figure 2-21. M60 Installation.**

## **g. M2 Mounting Procedure (Figure 2-22).**

The Aiming Light is attached to the M2 Machine Gun using a Bracket Adapter and an M2 Mounting Bracket.

---

### **WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

- (1)** Release the catch at the left side of the cartridge cover and raise the cover to the UP position.
- (2)** Position the M2 Mounting Bracket assembly over the breech of the Machine Gun and slide it to the rear until it stops beyond the rear edge of the breech.
- (3)** Swing the three locking cams to the rear to secure the bracket to the weapon (side cam first, followed by two top locking cams).
- (4)** Close the cartridge cover and secure with the catch.
- (5)** Secure the Bracket Adapter to the underside of the Aiming Light (Figure 2-20).
- (6)** Place the Bracket Adapter into the M2 bracket mounting groove with the rear of the adapter flush with the rear of the bracket (Figure 2-22). Hand tighten the bracket's lever screw into the Bracket Adapter hole.

**(7)** For Aiming Light momentary "ON" operation, connect the Cable Switch to the rear of the Aiming Light .

---

**WARNING**

---

Route the Cable so it does not interfere with any moving parts on the weapon, does not block ammunition feed or ejection ports and doesn't get snagged by branches.

**(8)** Wrap the cable around the bracket adapter to provide sufficient cable length to secure the Cable Switch as shown in Figure 2-22 using Cable Hangers (or adhesive tape) to secure cable to the weapon.



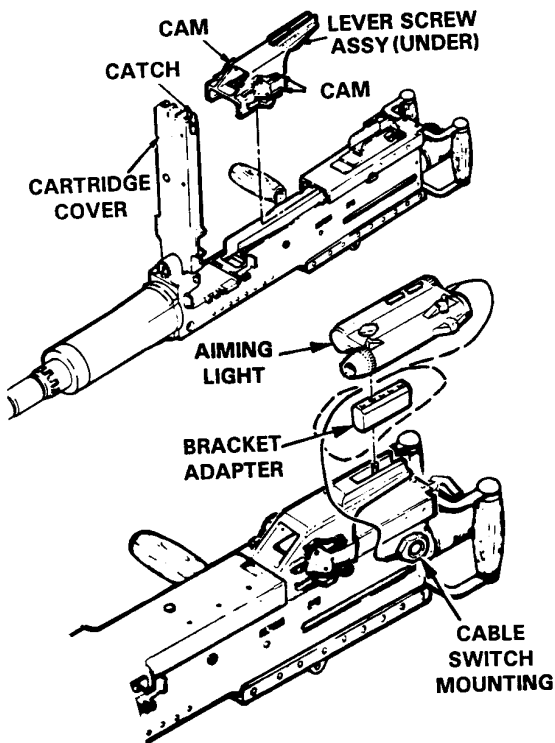


Figure 2-22. M2 Installation.

## **h. M136 (AT4) Launching and Cartridge Mounting Procedure.**

The aiming light is attached to the M136 (AT4) Launcher and Cartridge by first attaching the mounting bracket to the weapon and then attaching the aiming light to the mounting bracket. (Figure 2-23.1 and 2-23.2).

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### **WARNING**

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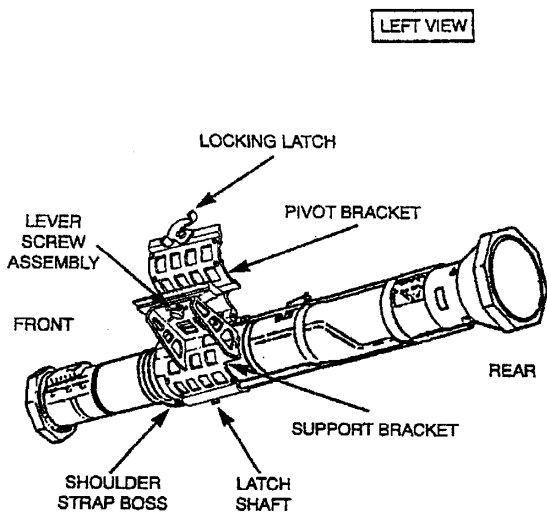
- Only M136 (AT4) qualified personnel should install and use the mounting bracket assembly.
- Conduct all M136 (AT4) operator preventative maintenance checks and services prior to installation of mounting bracket assembly.

### **NOTE**

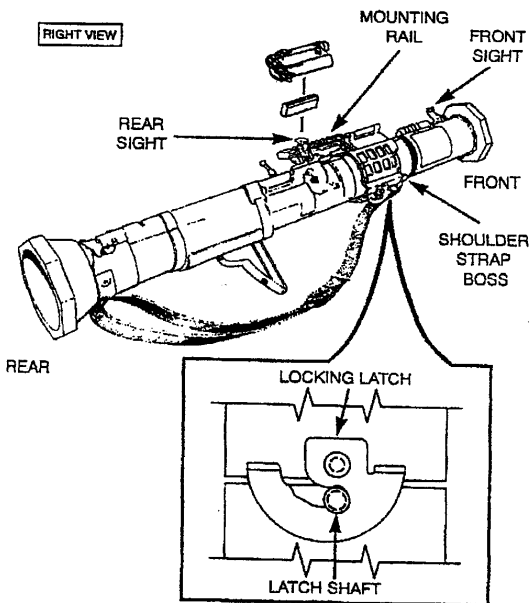
All references to the M136 (AT4) Launcher and cartridge are also applicable to the M287 9 mm Tracer Bullet Training device.

- (1) Cradle M136 (AT4) in left arm.
- (2) Position support bracket with mounting rail on left side and the marking "FRONT" over the rear sight.

- (3) With the pivot bracket spread open, place support bracket against base of the rear sight housing and bottom on the shoulder strap boss.
- (4) Swing pivot bracket around the M136 (AT4) and secure by rotating the locking latch clockwise to engage the latch shaft.
- (5) Lever screw assembly must be located in rear threaded screw hole when mounting the aiming light. Lever screw assembly may require relocation from the front to the rear threaded screw hole.
- (6) Place aiming light in groove of the mounting rail so that the threaded screw hole in the base of the aiming light is aligned with the lever screw assembly and tighten the lever screw assembly firmly.



**Figure 2-23.1. M136 (AT4) Installation.**



**Figure 2-23.2. M136 (AT4) Installation.**

## **2-8. OPERATION OF AIMING LIGHT.**

These procedures describe operation of both the AN/PAQ-4B with its pulsating infrared beam and the AN/PAQ-4C which features a continuous infrared beam.

### **NOTE**

**ALL REFERENCES TO THE AN/PAQ-4B ALSO  
PERTAIN TO THE AN/PAQ-4C**

### **WARNING**

- Do not stare into the infrared laser beam.
- Do not look into the infrared laser beam through binoculars or telescopes.
- Do not shine the infrared laser beam into mirror surfaces.
- Do not shine the infrared laser beam into other individuals' eyes.

### **WARNING**

To reduce the risk of detection by an enemy wearing NVG's, avoid prolonged activation of the Aiming Light prior to firing.

#### **a. Operation with M16A1/A2.**

##### **NOTE**

When used with the M16A1/A2, the Aiming Light is activated in the #4 ON MOMENTARY position only (Figure 2-2).

- (1)** Press the ON/OFF switch against the weapon handguard to activate the Aiming Light.
- (2)** The Aiming Light will project an infrared spot towards the target.
- (3)** The Aiming Light shuts off when pressure on the switch is released.
- (4)** The Aiming Light is now ready for zeroing to the weapon.

#### **b. Operation with M16/M203.**

##### **NOTE**

When operated with the M16/M203, the Aiming Light is activated in the #1 OFF/STORE position only (Figure 2-2). The Aiming Light is used to aim only the rifle, not the grenade launcher.

- (1)** Press the Cable Switch Button to activate the Aiming Light.

**(2)** The Aiming Light will project an infrared spot towards the target.

**(3)** The Aiming Light shuts off when pressure on the switch is released.

**(4)** The Aiming Light is now ready for zeroing to the weapon.

### **c. Operation with M4 Carbine.**

#### **NOTE**

When operated with the M4, the Aiming Light is activated in the #4 ON MOMENTARY position only (Figure 2-2).

**(1)** Press the ON/OFF switch against the weapon handguard to activate the Aiming Light.

**(2)** The Aiming Light will project an infrared spot towards the target.

**(3)** The Aiming Light shuts off when pressure on the switch is released.

**(4)** The Aiming Light is now ready for zeroing to the weapon.



**d. Operation with M4 MWS (Left Side).**

**NOTE**

When operated with the MWS, the Aiming Light is activated in the #1 OFF/STORE position (Figure 2-2). The Aiming Light may also be activated in the #2 ON MOMENTARY Position when using the Standard Rail Grabber Bracket.

**(1)** Press the Cable Switch Button to activate the Aiming Light.

**(2)** The Aiming Light will project an infrared spot towards the target.

**(3)** The Aiming Light shuts off when pressure on the switch is released.

**(4)** The Aiming Light is now ready for zeroing to the weapon.

**e. Operation with M4 MWS (Top).**

**NOTE**

When operated with the MWS, the Aiming Light is activated in the #4 ON MOMENTARY position or #1 OFF STORAGE position (Figure 2-2).

**(1)** Press the ON/OFF switch against the weapon handguard or presse the Cable Switch button to activate the Aiming Light.

**(2)** The Aiming Light will project an infrared spot towards the target.

**(3)** The Aiming Light shuts off when pressure on the switch is released.

**(4)** The Aiming Light is now ready for zeroing to the weapon.

**f. Operation with M249,M2 and M60 Machineguns.**

**(1)** Rotate the ON/OFF switch to the #3 ON STEADY position (Figure 2-2) to activate the Aiming Light.

**(2)** The Aiming Light will project an infrared spot towards the target.

**(3)** The Aiming Light will stay on until the switch is rotated to OFF.

**(4)** When using the Cable Switch for momentary ON capability, leave the ON/OFF Switch in the #1 OFF/STORE position (Figure 2-2).

**(5)** Push the Cable Switch button to activate the Aiming Light and release to turn the Aiming Light off.

**(6)** The Aiming Light is now ready for zeroing to the weapon.

## **g. Operation with M136 (AT4) Launcher and Cartridge**

**(1)** Rotate the ON/OFF switch to the #3 ON STEADY position (Figure 2-2) to activate the Aiming Light.

**(2)** The Aiming Light will project an infrared spot towards the target.

**(3)** The Aiming Light will stay on until the switch is rotated to OFF.

**(4)** The Aiming Light is now ready for zeroing to the weapon.

## **2-9. ZEROING PROCEDURES (ARMY)**

The following procedures describe the Army method of zeroing the Aiming Light to the rifle at 25 meter ranges. Zeroing procedures for the Marines are in Section 2-10.

### **NOTE**

On the M16/M203, The Aiming Light is only zeroed to the M16, and is not used for the grenade launcher.

Use procedures in 2-9a and 2-9b for all weapons except the M136 (AT4). Use procedure 2-9c for zeroing the M136 (AT4).

## **a. Initial Zeroing Preparation**

**(1)** Refer to the following Figures at the end of this section for a picture of the zeroing target to use in zeroing the Aiming Light to each weapon:

<u>Weapon</u>	<u>Figure</u>	<u>Page</u>
M16A1, M16A2	2-27	2-69
M16/M203 (Army)	2-28	2-70
M4/M4A1	2-29	2-71
M4/MWS (left side)	2-30	2-72
M4/MWS (top)	2-31	2-73
M249	2-32	2-74
M249 (rail equipped)	2-33	2-75
M60	2-34	2-76
M2	2-35	2-77

**(2)** On an M16A2 25 meter zeroing target, mark the Designated Strike Point and Designated Strike Zone as shown in the figure for each weapon.

**(3)** Attach the zeroing target to a flat surface at a distance of 25 meters on a firing range.

## **b. Zeroing.**

**(1)** Sandbag or brace the weapon.

**(2)** When directed by range personnel to fire, turn on the Aiming Light and place the beam spot on the target aiming point. Fire a three round shot group.

## **WARNING**

Make sure the weapon is CLEAR and on SAFE before checking target.

**(3)** When directed by range personnel, check the target. Mark the center of the shot group. Record the number of squares and the direction required to move the center of the shot group to the Designated Strike Point.

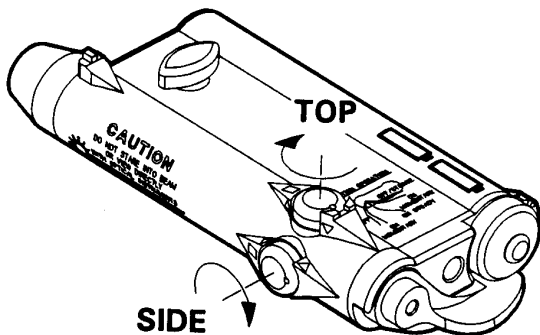
**(4)** Refer to Table 2-3 or 2-4 and rotate each adjuster in the direction required to move the center of the shot group to the Designated Strike Point.

## **NOTE**

One click = one square on the 25 meter target.

**Table 2-3 M16A1/A2, M16/M203, M4, M4 MWS (Top), M249, M2, M60, M136 (AT4), Adjuster and Shot Group Movement.**

	Adjuster Movement	Shot Group Movement
Top Adjuster Elevation	CW CCW	Up Down
Side Adjuster Azimuth (windage)	CW CCW	Left Right



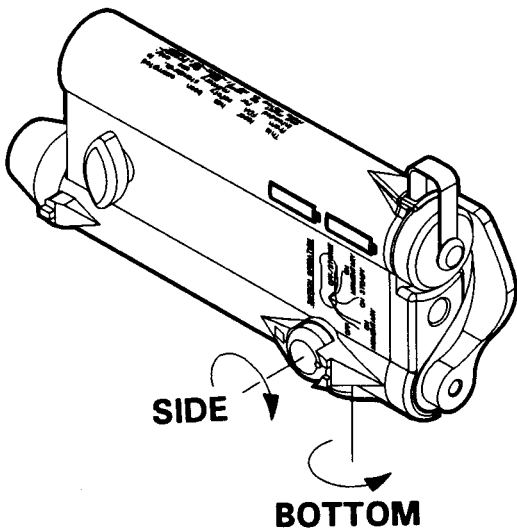
**Figure 2-24. Aiming Light on Top.**



**Table 2-4**

**M4 MWS (Left), Adjuster and Shot Group Movement.**

	Adjuster Movement	Shot Group Movement
Bottom Adjuster Elevation	CW CCW	Down Up
Side Adjuster Azimuth (windage)	CW CCW	Left Right



**Figure 2-25. Aiming Light on Left Side.**

**EXAMPLE:** Refer to Figure 2-26 for an M16A2 rifle. The center of the shot group is near the bottom left corner of the target.

The shot group needs to move 5 squares up and 8 squares to the right in order to be at the designated strike point.

Refer to Table 2-3. Rotate the top adjuster clockwise (CW) 5 clicks, and the side adjuster counter-clockwise (CCW) 8 clicks.

Diagram illustrating a 300-meter square grid used for target acquisition. The grid is divided into four quadrants by a central vertical line. The grid is labeled with "300 METERS" at the bottom. The grid is labeled with "AIMING POINT" at the top center. The grid is labeled with "DESIGNATED STRIKE POINT" at the bottom center. The grid is labeled with "DESIGNATED STRIKE ZONE" at the bottom center. The grid is labeled with "FRONT SIGHT" at the top left and bottom right. The grid is labeled with "REAR SIGHT" at the top right and bottom left.

**2-67**

**(5)** When directed by range personnel, aim the weapon so that the Aiming Light Beam Spot lies on the target Aiming Point and fire another 3 round shot group.

---

### **WARNING**

---

Make sure the weapon is CLEAR and on SAFE before checking target.

**(6)** When directed by range personnel, re-check the target. Continue adjusting the Aiming Light and firing 3 round shot groups to confirm zero until 2 of the 3 rounds are within the Designated Strike Zone.

**(7)** When 2 out of 3 rounds hit the Designated Strike Zone, the weapon is zeroed for 250 meters range and is ready for operation.

### **NOTE**

The Aiming Light will retain zero after it has been removed and replaced on the same weapon, however, the Aiming Light must be rezeroed whenever the mounting bracket is removed and replaced on the weapon.

# 25 METER ZEROING TARGET M16A2

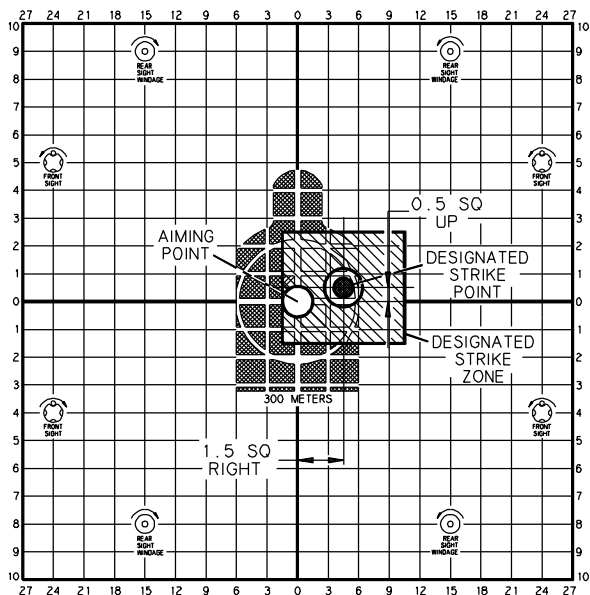


Figure 2-27. M16A1/A2 Zeroing Target.

25 METER ZEROING TARGET  
M16A2

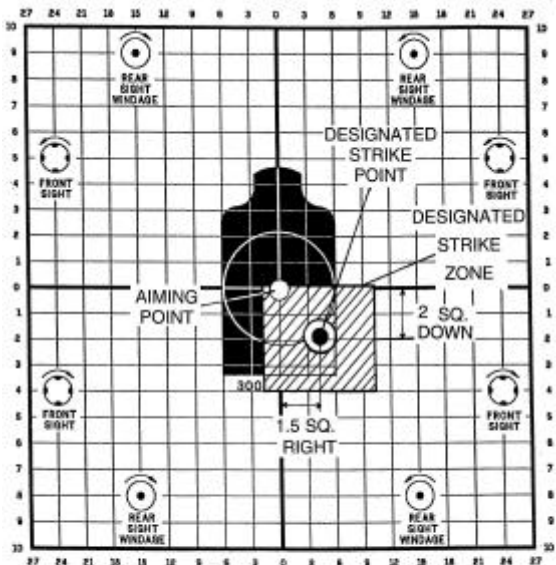


Figure 2-28. M16/M203 Rifle Zeroing Target  
(Not for Grenades.)

# 25 METER ZEROING TARGET M16A2

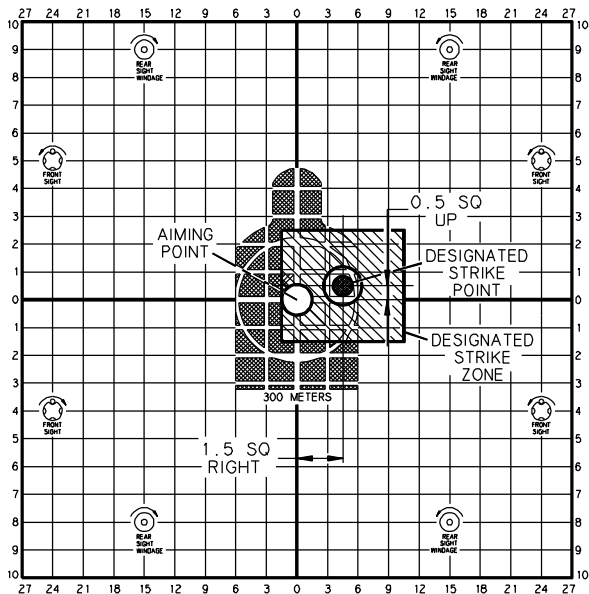


Figure 2-29. M4 Zeroing Target.

25 METER ZEROING TARGET  
M16A2

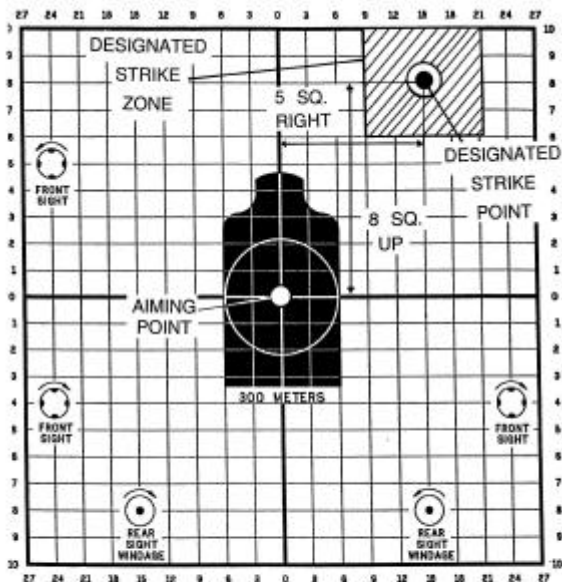


Figure 2-30. M4 MWS (Left Side) Zeroing Target.



The diagram shows a 300-meter square designated strike zone centered on a grid. The zone is divided into four quadrants by a horizontal and vertical line. The top-left quadrant is shaded with a cross-hatch pattern. The top-right quadrant is shaded with diagonal lines. The bottom-left quadrant is shaded with a grid pattern. The bottom-right quadrant is unshaded. The zone is labeled "300 METERS" at the bottom. The grid has a central vertical line and horizontal lines. The vertical line is labeled "1.5 SQ RIGHT" with an arrow pointing right. The horizontal line is labeled "0.5 SQ UP" with an arrow pointing up. The zone is labeled "DESIGNATED STRIKE ZONE" and "DESIGNATED STRIKE POINT". The "AIMING POINT" is marked with a circle and a crosshair. The grid has a coordinate system with numbers 1 to 10 on the vertical axis and 27 to 0 to 27 on the horizontal axis. There are four "FRONT SIGHT" and "REAR SIGHT WINDAGE" markers on the grid.

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**2-74**

25 METER ZEROING TARGET  
M16A2

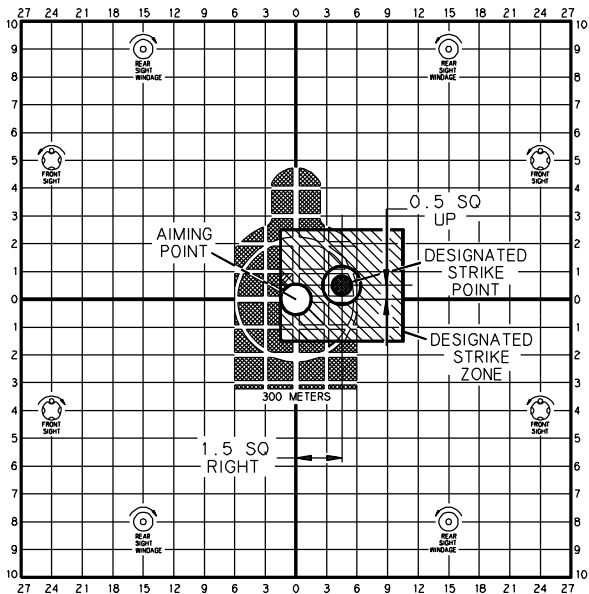


Figure 2-33. M249 (Rail Equipped) Zeroing Target.

# 25 METER ZEROING TARGET M16A2

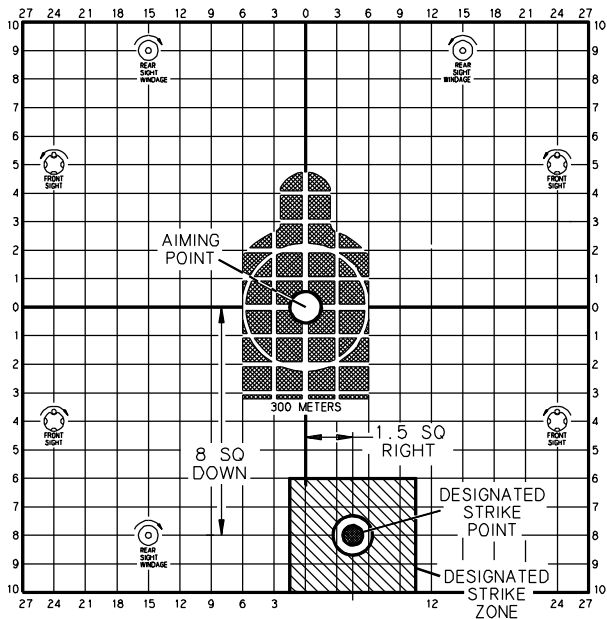
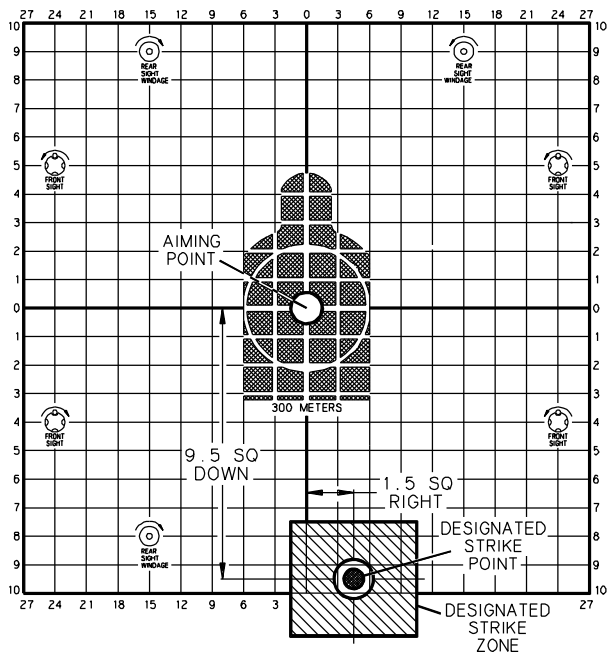


Figure 2-34. M60 Zeroing Target.

# 25 METER ZEROING TARGET M16A2



**Figure 2-35. M2 Zeroing Target.**

### **c. Procedures for Zeroing, M136 (AT4) Launcher and Cartridge**

- (1) Select a stable position for the weapon.
- (2) Open M16 (AT4) front and rear sight covers. During limited visibility conditions the 7mm peephole may be necessary for zeroing.
- (3) Set rear sight for 200 meters.
- (4) Mount the Aiming Light. Verify mounting procedure in para 2-7. This aiming light will be called the "mounted aiming light" during this procedure.
- (5) Select suitable target at 200 meters and align weapon to coincide with the aiming point on the target.
- (6) Turn on the AN/PAQ-4B.
- (7) Without moving the weapon, adjust the mounted aiming light so that the 200 meter range marks coincide with the aiming point.
- (8) Repeat procedure 5 and 7 until the mounting aiming light is sight aligned to the weapon.
- (9) Turn off AN/PAQ-4B.

## **2-10. ZEROING PROCEDURES (MARINE).**

### **36 Yard/30 Meter Field Expedient Zeroing Procedures for the AN/PAQ-4C**

1. Set the adjusters to the neutral position.
2. Attach the boresight filter.
3. Don and adjust the AN/PVS-7B night vision goggle.
4. Assume a supported prone position

#### **NOTE**

Sandbagging or bracing the weapon reduces movement and improves the zero

5. Activate the AN/PAQ-4C and place the laser dot centered on the non-gloss (flat) black aiming area (see figure 2-36).

#### **NOTE**

At close ranges, the laser dot will appear larger/brighter when not properly centered on the black aiming area

6. Fire a three shot group.
7. Locate the center of the shot group.
8. Determine the number of windage and elevation clicks required to place the center of the shot group 1 3/8" above and 1" to the right of the point of aim.

## NOTE

When zeroing at 36 yards/30 meters, one click on the elevation knob will move the strike of the round approximately 1/2 inch

9. Rotate the elevation and windage knobs the required number of clicks.

TO MOVE THE STRIKE OF THE ROUND	ROTATE THE WINDAGE OR ELEVATION KNOB:
Left	Clockwise
Right	Counterclockwise
Up	Clockwise
Down	Counterclockwise

10. Repeat steps 4-9 until the center of the shot group falls 1 3/8" above and 1" to the right of the point of aim.
11. To confirm the zero, fire a five shot group.

## NOTE

If the center of the shot group impacts at the desired point the device is considered zeroed. If not repeat steps 4 - 9.



# 36 - YARD

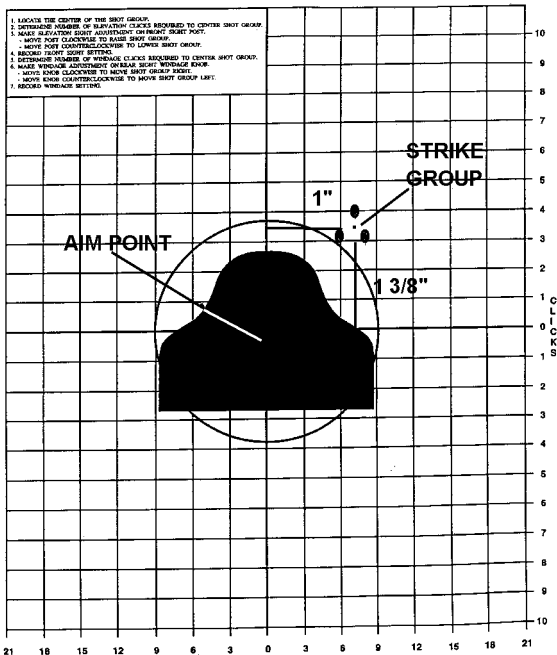


Figure 2-36. 36 YARD ZEROING TARGET.

## **200 METER ZEROING PROCEDURES FOR THE AN/PAQ-4C**

1. Set the adjusters to the neutral position.
2. Don and adjust the AN/PVS-7B night vision goggle.
3. Assume a supported prone position.

### **NOTE**

Sandbagging or bracing the weapon reduces movement and improves the zero

4. Activate the AN/PAQ-4C and place the laser dot centered on the non-gloss (flat) black aiming area.
5. Fire a three shot group.
6. Locate the center of the shot group.
7. Determine the number of windage and elevation clicks required to center the shot group on the target.

Range to Target in Meters:	One click will move the strike of the round:
50 meters	3/4 inches
100 meters	1 1/2 inches
150 meters	2 1/4 inches

8. Rotate the elevation and windage knobs the required number of clicks.

TO MOVE THE STRIKE OF THE ROUND	ROTATE THE WINDAGE OR ELEVATION KNOB:
Left	Clockwise
Right	Counterclockwise
Up	Clockwise
Down	Counterclockwise

9. Repeat steps 3-8 until the shot group is centered on the target.
10. To confirm the zero, fire a five shot group.

### **NOTE**

If the center of the shot group impacts at the desired point the device is considered zeroed. If not repeat steps 3 - 8.

## **SECTION IV.**

### **OPERATION UNDER UNUSUAL CONDITIONS**

#### **2-11. OPERATING PROCEDURES FOR UNUSUAL WEATHER CONDITIONS**

##### **a. Rain, Fog, or Smoke.**

---

**WARNING**

---

The infrared beam is more detectable to the enemy using NVG's when shining through smoke, fog and rain. Avoid prolonged activation of the Aiming Light in these conditions.

#### **NOTE**

Effective range is decreased under these conditions.

Clean the lens with a cotton swab if the beam is obscured by condensation.

**b. Extreme Cold.**

When not in use, keep the AA batteries as near to room temperature as conditions permit. This helps to maximize the effective range of the aiming light.

**c. Dusty or Sandy Area.**

Keep sand and dust out of the Optical Baffle. Avoid pointing the Aiming Light into the wind for long periods.

**d. Salt Water Areas.**

(1) After exposure to salt water conditions, clean the Aiming Light and Mounting Bracket by rinsing them in fresh water.

(2) Dry all parts of the Aiming Light and Mounting Bracket after removing all traces of salt water.

# **CHAPTER 3**

## **OPERATOR MAINTENANCE**

### **INSTRUCTIONS**

#### **3-1. GENERAL**

This Chapter presents troubleshooting and maintenance procedures performed by the operator to identify and correct common malfunctions.

### **SECTION I.**

## **OPERATOR TROUBLESHOOTING**

### **PROCEDURES**

#### **3-2. PURPOSE OF TROUBLESHOOTING**

The purpose of troubleshooting is to identify the most frequent equipment malfunctions, probable causes, and corrective actions required.

#### **3-3. TROUBLESHOOTING PROCEDURES**

Table 3-1 lists the common malfunctions which may be found during the operation or maintenance of the Aiming Light and support equipment. Perform the tests, inspections, and corrective actions in the order listed.

This manual cannot list all malfunctions that may occur, nor all tests, inspections, and corrective actions. If a malfunction is not listed or is not corrected by listed corrective actions, notify your supervisor.

### **Table 3-1. Troubleshooting.**

#### **MALFUNCTION**

Test or Inspection

*Corrective Action*

---

#### **WARNING**

Do not look directly into the Aiming Light beam when batteries are installed.

#### **CAUTION**

Operators are only authorized to replace batteries, remove and clean the optical baffle, and clean the outer surfaces of the Aiming Light and its external components.

#### **1. INFRARED LIGHT BEAM FAILS TO COME ON WHEN ON/OFF SWITCH IS TURNED TO POSITION #3 ON STEADY (Figure 2-2).**

- a. Check to see if lens or optical baffle is obscured by mud or dirt.

*Clean Lens (Para. 3-5) and Optical Baffle (Para. 3-4).*

- b. Check battery installation.

*Install new batteries (Para. 2-5b).*

**Table 3-1. Troubleshooting (continued).**

**MALFUNCTION**

Test or Inspection

*Corrective Action*

---

- c. Internal Failure.

*Report Failure IAW TM 738-750.*

*Return the Aiming Light to Unit Maintenance.*

**2. AIMING LIGHT DOES NOT OPERATE WHEN MOUNTED ON WEAPON.**

- a. Remove Aiming Light from weapon.  
Repeat procedures in malfunction #1 above.

- b. Check bracket and/or adapters for damage.

*Return bracket and/or adapter to Unit Maintenance.*

- c. Review installation procedures and reinstall on weapon.

**3. INFRARED LIGHT BEAM HAS BECOME WEAK**

- a. Check to see if lens or optical baffle is obscured by mud or dirt.

*Clean Lens (Para. 3-5) and Optical Baffle (Para. 3-4).*



**Table 3-1. Troubleshooting (continued).**

**MALFUNCTION**

Test or Inspection

*Corrective Action*

---

- b. Check batteries.

*Install new batteries (Para. 2-5b).*

- c. Check to see if lens is scratched or pitted.

*Return the Aiming Light System to Unit Maintenance if beam still appears weak.*

**4. INFRARED LIGHT BEAM DOES NOT MOVE.**

Check adjusters.

*Clean as required.*

*Damaged, return Aiming Light System to Unit Maintenance.*

**5. CABLE SWITCH INOPERABLE, BUT ON/OFF SWITCH FUNCTIONS.**

- a. Check that Cable Switch plug is fully seated.

*Reconnect plug.*

- b. Check cable switch socket for mud or dirt.

*Clean cable switch socket with cotton swab (Para. 3-8).*

**Table 3-1. Troubleshooting (continued).**

**MALFUNCTION**

Test or Inspection

*Corrective Action*

---

- c. Recheck function of Cable Switch.  
*Return the Cable Switch and IAL to Unit Maintenance.*

**6. AIMING LIGHT CANNOT BE ZEROED TO WEAPON.**

- a. Check that Bracket is properly positioned and secured to weapon.  
*Properly position and secure.*
- b. Check that Aiming Light is properly positioned and secure on Bracket.  
*Properly secure Aiming Light.*
- c. Check for bent Bracket or Adapter.  
*Return Bracket or Adapter to Unit Maintenance.*
- d. Check for beam movement.  
*See #4 above.*

## **SECTION II.**

### **OPERATOR MAINTENANCE**

### **INSTRUCTION**

#### **3-4. PROCEDURE FOR INSPECTING AND CLEANING OPTICAL BAFFLE.**

- a.** Unscrew Optical Baffle from Aiming Light by turning counter-clockwise.

#### **CAUTION**

Do not use any mechanical cleaning devices to clean Optical Baffle.

- b.** Inspect for dust or clogged-up baffle hole. If dusty or clogged, clear and clean by rinsing in water. If Optical Baffle cannot be cleaned, return IAL to Unit Maintenance.
- c.** Inspect for dented or bent elements. If any such damage is found, return IAL to Unit Maintenance.

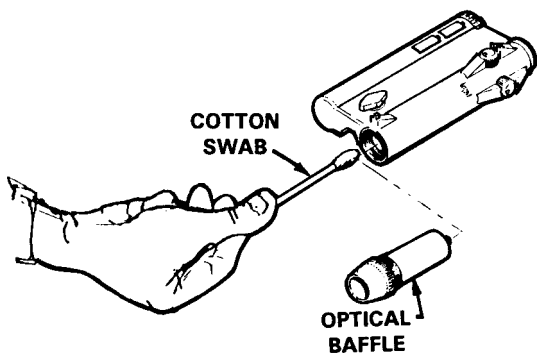
## **CAUTION**

To avoid cross-threading, insert and turn the optical baffle counter-clockwise a half-turn, then screw it in, turning clockwise. Do not tighten more than hand tight.

- d.** Reinstall optical baffle and tighten CW hand tight.

### **3-5. PROCEDURE FOR CLEANING LENS**

- a.** Remove Optical Baffle (Para. 3-4a).
- b.** Clean lens with cotton swab. For better cleaning, the cotton swab may be dampened with isopropyl alcohol (Fig. 3-1).
- c.** Install Optical Baffle (Para. 3-4d).



**Figure 3-1. Cleaning Lens.**

### **3-6. PROCEDURE FOR CLEANING TEXTILE BAG**

- a.** Remove all items from Textile Bag (Figure 2-11).
- b.** Turn bag upside down to shake out loose particles of dirt.
- c.** Remove mud.

### **3-7. PROCEDURE FOR CORRODED BATTERIES**

- a.** Remove batteries from battery compartment.
- b.** Turn IAL upside down to shake out loose corrosion.
- c.** Clean battery compartment with cotton swab.

### **3-8. PROCEDURE FOR CLEANING AIMING LIGHT CABLE SWITCH SOCKET**

- a.** Flush with water.
- b.** Wipe clean with cotton swab.

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## **CHAPTER 4 UNIT MAINTENANCE**

### **SECTION I. REPAIR PARTS, SPECIAL TOOLS, TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE), AND SUPPORT EQUIPMENT**

#### **4-1. COMMON TOOLS AND EQUIPMENT**

##### **NOTE**

**ALL REFERENCES TO THE AN/PAQ-4B ALSO  
PERTAIN TO THE AN/PAQ-4C**

There are no tools or equipment required for Unit Maintenance personnel for servicing the AN/PAQ-4B or the AN/PAQ-4C.

#### **4-2. REPAIR PARTS**

Repair parts are listed and illustrated in Appendix C, Repair Parts and Special Tools List. Maintenance procedures are provided in Sections III and IV of this Chapter.



## **SECTION II.**

### **SERVICE UPON RECEIPT**

#### **4-3. UNPACKING**

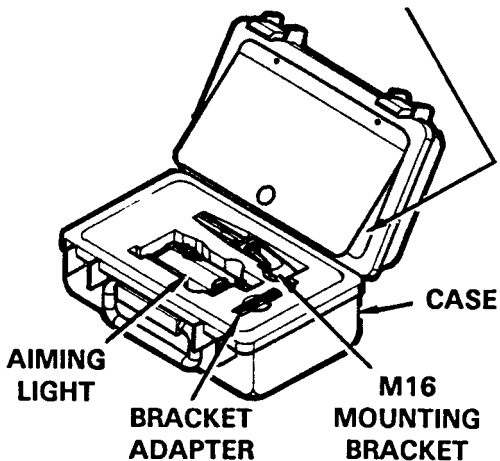
##### **CAUTION**

Carefully open shipping container. Do not puncture the container, or damage to the Shipping/Storage Case may result.

Unpack the AN/PAQ-4B or AN/PAQ-4C from the shipping container as follows:

- a.** Carefully open shipping container cushioning material.
- b.** Remove Shipping/Storage Case containing the AN/PAQ-4B or AN/PAQ-4C (Figures 4-1 & 4-1.1).
- c.** Save cardboard boxes and cushioning material for temporary storage or return shipments.

**REMOTE SWITCH, BARREL ADAPTER  
TECHNICAL MANUAL, TEXTILE BAG  
AND COTTON SWABS IN THIS  
COMPARTMENT**



**Figure 4-1. Shipping/Storage Case (Army).**

Operators and Unit Maint Mnl  
 Assembly, Strapless Remote SW  
 Hanger, Cable Applicator,  
 Disposable Bag, Textile  
 Optional: Adapter, Barrel, M16A1  
 M-16 Mounting Bracket Assembly

Training Extender

Adapter, Bracket

Infrared Aiming  
 Light Assembly

Shroud,  
 Switch Lever

Assembly,  
 Boresighting  
 Filter

Key, Socket Head Screw  
 Optional

Assembly,  
 IAL Bracket  
 M4/M16A2

Case Assembly,  
 Electronic  
 Communication  
 Equipment

**Figure 4-1.1. Shipping/Storage Case**

#### **4-4. CHECKING UNPACKED EQUIPMENT**

When checking unpacked equipment, the following tasks should be performed:

- a.** Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, report the damage on SF 364, Report of Discrepancy (ROD).
- b.** Check the equipment against the packing slip to see if the shipment is complete. See Appendices C (Repair Parts and Special Tools List) and D (Components of End Item List). Report all discrepancies in accordance with the instructions of DA PAM 738-750.

#### **4-5. REPACKAGING**

When packed for shipment, the Shipping/Storage Case containing the AN/PAQ-4B or AN/PAQ-4C is wrapped with cushioning material and placed in a close fitting cardboard box. Finally, the cardboard box is packed in a shipping container and metal banded.

# **SECTION III.**

## **UNIT PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)**

### **4-6. GENERAL INSTRUCTIONS**

PMCS is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Unit preventive maintenance checks and services (PMCS) are performed semiannually (Table 4-1). If the equipment fails to operate, notify the next higher level of maintenance.

Semiannual PMCS will be scheduled in accordance with procedures specified in DA PAM 738-750.

The Item No. column in Table 4-1 shall be used as a source of item numbers for the TM number column on DA Form 2404 (Equipment Inspection and Maintenance Worksheet) in recording the results of the PMCS.

The Item to be Inspected column lists the items to be inspected.

If the equipment fails to meet the criteria in the Procedure column in Table 4-1, report the failure in accordance with the procedures specified in DA PAM 738-750.

Some of the routine checks that may not be listed in the PMCS Table are cleaning, checking gasket, stowing items not in use, and checking for loose or missing parts. These checks should be done whenever needed.

Table 4-1. Preventive Maintenance Checks and Services Semi-Annual Schedule.

ITEM NO.	LOCATION	PROCEDURE	NOT FULLY MISSION CAPABLE IF:
	ITEM TO CHECK/ SERVICE		
1	End Item	Verify that all components required to make the AN/PAQ-4B or AN/PAQ-4C operational are on hand. (para. 2-5)	Components Missing.
2	Publication	TM 11-5855-301-12&P is on hand with latest changes; see DA PAM 25-30 for current publication listings.	Manual Missing.
3	Modifications	Check DA PAM 25-30 to see if any modification work orders (MWO) are listed for the AN/PAQ-4B or AN/PAQ-4C or its components. All URGENT MWO's must be applied immediately; all NORMAL MWO's must be scheduled.	URGENT MWO's have not been applied.
4	Interior and Exterior Surfaces	Remove dust, fungus, and corrosion. (para. 3-4 through 3-8)	Dusty, fungal growth or corroded.
5	Components	Verify that components are free of corrosion, foreign materials or damage, that optical baffle, battery cap assembly and thumbscrew are securely attached.	Corroded or damaged.

## **SECTION IV.**

### **UNIT MAINTENANCE PROCEDURES**

#### **4-7. SCOPE**

Unit maintenance consists of operational tests, inspections, troubleshooting, and the replacement of a limited number of parts. This category of maintenance does not require special test equipment or complex procedures. Authorized unit support maintenance is listed in the Maintenance Allocation Chart (MAC), Appendix B. An Aiming Light failing to meet operational tests and inspections should be replaced. Failed units should be sent to the depot as noted in Paragraph 1-6.

#### **4-8. TESTS AND INSPECTIONS**

##### **a. Visual/Mechanical Inspection.**

Observe the unit for obvious mechanical damage such as deformed Mounting Bracket, inoperative ON/OFF Switch or Cable Switch, scratched lens, broken or jammed Adjusters, separated Battery Cap Retaining Strap, and other evidence of damage or misuse which might indicate a need for repair (Figure 4-2).

Replace as required (Para. 4-7). Conduct checkout of replacement and check proper operation of the Aiming Light. If operable, return to service. If not operable, continue troubleshooting.



### **b. Functional Test.**

Conduct a functional test using a dark room or area away from the light. Use NVG's (AN/PVS-5A, 5B, 5C or AN/PVS-7A, 7B) and observe the light spot.

For proper operation, the IAL should produce a bright pulsing spot (AN/PAQ-4B) or a bright continuous spot (AN/PAQ-4C) when viewed with NVG's.

Check the operation of the Adjusters as well (Para. 2-2).

## **4-9. TROUBLESHOOTING PROCEDURES**

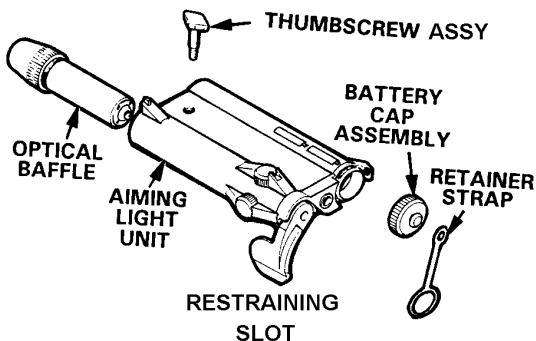
Information concerning equipment malfunctions and necessary corrective action to take are listed in Table 3-1

The Table lists the common malfunctions which may occur during the operation or maintenance of the Aiming Light and support equipment.

Perform the tests, inspections, and corrective actions in the order listed.

This manual cannot list all malfunctions that may occur, nor all tests, inspections, and corrective actions.

If a malfunction is not listed or is not corrected by listed corrective actions, notify the supervisor.



**Figure 4-2. Exploded View, AN/PAQ-4B and AN/PAQ-4C.**

## **4-10. REMOVAL AND INSTALLATION OF PARTS**

Unit maintenance includes removal and replacement of assemblies.

### **a. Optical Baffle Removal and Installation.**

See Paragraph 3-4 for procedures.

### **b. Battery Removal and Installation.**

See Paragraph 2-5b for procedures.

**c. Removal of Battery Cap.** (Fig. 4-2). Unscrew Battery Cap from back of Aiming Light. Stretch retaining strap over the stud on the Battery Cap.

### **d. Removal of Retaining Strap.** (Fig. 4-2)

Peel one end of the Retaining Strap off of the stud in the Battery Cap. Peel the other end off the threaded insert in the end of the Battery Compartment.

**e. Installation of Retaining Strap.** Fold the large end of the Retaining Strap in half lengthwise. Pass it through the restraining slot in the direction inward towards the Battery Compartment.

Stretch the large ring over the threaded insert at the rear of the Battery Compartment. Seat the Retaining Strap in the groove at the base of the threads. Stretch the small ring over the mounting stud on the Battery Cap.

**f. Installation of Battery Cap.**

Install Retaining Strap (Para. 4-10e), then screw the Battery Cap clockwise onto the end of the battery compartment.

**g. Removal and Installation of Thumbscrew Assembly (Fig. 4-2)**

To remove, turn Thumbscrew CCW while lifting it until it disengages from the Aiming Light Unit. To replace, thread the Thumbscrew into the hole in the top of the Aiming Light and turn CW until threaded portion exits from the bottom.

**h. Aiming Light.** The Aiming Light Unit contains the electronic, mechanical, optical and control functions and is not repairable. See Paragraph 1-6, Warranty Instructions for replacement.

Aiming Light Assembly components are replaced as required and are listed in Appendix C, Repair Parts and Special Tools List.

**i. M16A2 Mounting Bracket Installation.** (Figure 4-3)

**WARNING**

Make sure the weapon is CLEAR and on SAFE before proceeding.

**NOTE**

Only Small Arms Repairman MOS 2111, 45B (Army) are authorized to install the bracket.

- (1) Remove top and bottom handguards from rifle.
- (2) Align bracket on barrel ensuring that the notch in the underside of bracket fits over the gas tube and locating arm touches inside surface of handguard cap (see exploded view, Figure 4-3).

**NOTE**

Visually ensure there is equal space between the bracket and bracket caps when mounting screws are tightened

- (3) Secure bracket to rifle barrel with caps, lock washers and mounting screws. Hand tighten with socket head screw key (3 mm allen wrench).

---

## CAUTION

---

Make sure bracket is installed properly before re-installing handguards. Improperly installed brackets could cause damage to gas tube or handguard .

## NOTE

Ensure the mounting rail is removed from the bracket before reinstalling handguard

(4) Re-install top and bottom handguards to rifle.

(5) Align mounting rail guide holes with bracket posts inside hand guard holes and secure with 2 hexhead countersink screws. Hand tighten with 3 mm socket head screw key.

### **j. M16A2 Mounting Bracket Removal.** (Figure 4-3)

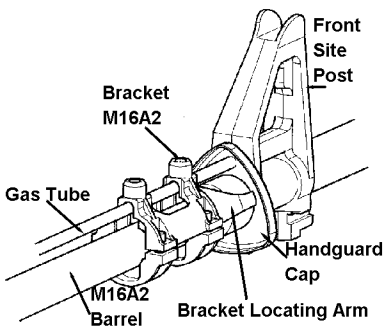
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## WARNING

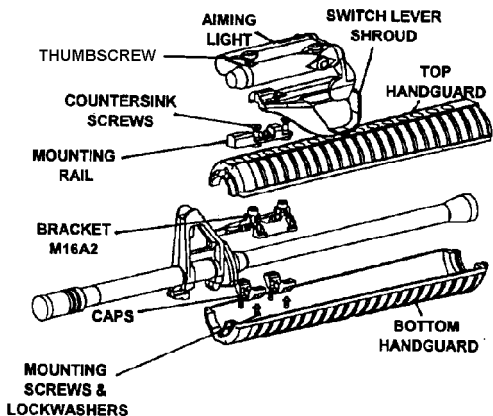
---

Make sure the weapon is CLEAR and on SAFE before proceeding.

- (1) Remove in reverse order of assembly. See paragraph 4-10i. Screw bracket caps and bracket together for storage.



**Rear view exploded**



**Figure 4-3. Installation on M16A2**

**k. M4/M16A2 Mounting Bracket Installation.** (Figure 4-3)

**WARNING**

Make sure the weapon is CLEAR and on SAFE before proceeding.

**NOTE**

Only Small Arms Repairman MOS 2111, 45B (Army) are authorized to install the bracket.

**(1) M4/16A2 Mounting Bracket Installation on M4A1 Carbine**

- a) Remove top and bottom handguards from rifle.
- b) Align bracket on barrel ensuring that the notch in the underside of bracket fits over the gas tube and locating arm touches inside surface of handguard cap (see exploded view, Figure 4-3).

**NOTE**

- c) Visually ensure there is equal space between the bracket and bracket caps when mounting screws are tightened



- d) Secure bracket to rifle barrel with caps, lock washers and mounting screws. Hand tighten with socket head screw key (3 mm allen wrench).

---

### **CAUTION**

---

Make sure bracket is installed properly before re-installing handguards. Improperly installed brackets could cause damage to gas tube or handguard .

---

### **CAUTION**

---

Top Inner heat shield must be removed from handguard, modified and re-installed in upper handguard prior to completing bracket installation.

- e) Mark location on top inner heat shield that interferes with bracket mounting posts and drill two (2) 3/8" diameter holes. Reinstall heat shield in upper handguard and verify that holes in heat shield line up with holes in handguard.

### **NOTE**

Ensure the mounting rail is removed from the bracket before reinstalling handguard

- f) Re-install top and bottom handguards to rifle.
- g) Align mounting rail guide holes with bracket posts inside hand guard holes and secure with 2

hexhead countersink screws. Hand tighten with 3 mm socket head screw key.

**I. M4/M16A2 Mounting Bracket Removal.** (Figure 4-3)

---

**WARNING**

---

Make sure the weapon is CLEAR and on  
SAFE before proceeding.

- (2) Remove in reverse order of assembly. See paragraph 4-10k. Screw bracket caps and bracket together for storage.

**m. M16/M203 Mounting Bracket Installation (Figure 4-4)**

---

**WARNING**

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

**NOTE**

Only Small Arms Repairman MOS 2111, 45B (Army) are authorized to install the bracket.

- (1) Remove top handguard from rifle.
- (2) Align bracket on barrel ensuring that the notch in the forward part of the bracket engages the mating feature in the U-shaped bracket for the M203 Grenade Launcher. (see exploded view, Figure 4-4).
- (3) Secure bracket to rifle barrel with caps, lock washers and mounting screws. Hand tighten with socket head screw key (7/64" allen wrench).

**NOTE**

Verify that front cap has a flat surface to align with surface of grenade launcher as shown in Figure 4-4.

---

## CAUTION

---

Make sure bracket is installed properly before re-installing handguards. Improperly installed brackets could cause damage to gas tube or handguard .

## NOTE

Ensure the mounting rail is removed from the bracket before reinstalling handguard

- (4) Re-install handguard to rifle.
- (5) Align mounting rail guide holes with bracket posts inside hand guard holes and secure with 2 screws. Hand tighten.

### **n. M16A2/M203 Mounting Bracket Removal. (Figure 4-4)**

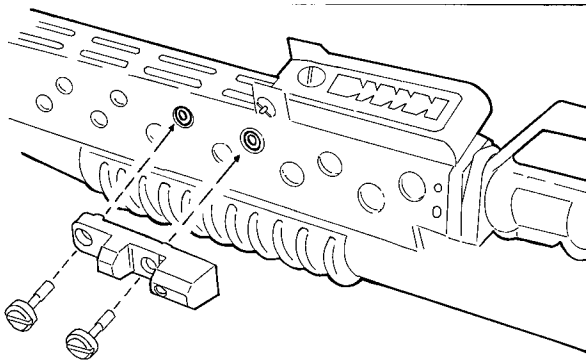
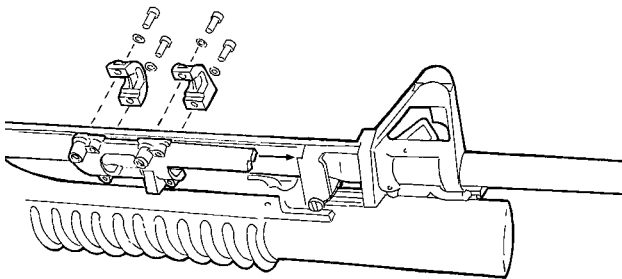
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## WARNING

---

Make sure the weapon is CLEAR and on SAFE before proceeding.

- (1) Remove in reverse order of assembly. See paragraph 4-10m. Screw bracket caps and bracket together for storage.



**Figure 4-4. M16/M203 Bracket Installation on M16A2**

# **APPENDIX A REFERENCES**

## **A-1. Scope**

This appendix lists all forms, technical manuals and miscellaneous publications referenced in this manual.

## **A-2. Forms**

DA 2404    Equipment Inspection and Maintenance Worksheet

DA 2028    Recommended Changes to Publications & Blank Forms

SF 361     Transportation Discrepancy Report (TDR)

SF 364     Report of Discrepancy (ROD)

SF 368     Product Quality Deficiency Report

NAVMC 10772    Recommended Changes to Publications/Logistics-Maintenance Data Coding

## **A-3. Field Manuals**

FM 21-11    First Aid for Soldiers

#### **A-4. Technical Manuals**

TM 11-5855-213-10	Operator's Manual, Night Vision Sight, Individual Served Weapon, AN/PVS-4.
TM 11-5855-214-10	Operator's Manual, Night Vision Sight, Crew Served Weapon, AN/TVS-5.
TM 11-5855-238-10	Operator's Manual, Night Vision Goggles AN/PVS-5, 5A, 5B, 5C.
TM 11-5855-262-10-1	Operator's Manual, Night Vision Goggles AN/PVS-7A.
TM 11-5855-262-10-2 TM 09500A-10/1	Operator's Manual, Night Vision Goggles AN/PVS-7B.
TM 09596C-12/2	Operator's Quick Reference Cards, AN/PAQ-4C
TM 4700-15/1	Equipment Record Procedures Manual
TM 750-24 4-2	Procedures for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

## **A-5. Miscellaneous Publications**

DA PAM 738-750

The Army Maintenance  
Management System  
(TAMMS)



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# **APPENDIX B**

## **MAINTENANCE ALLOCATION CHART**

### **SECTION I.**

### **INTRODUCTION**

#### **NOTE**

**THIS SECTION IS FOR ARMY ONLY**

#### **B-1. General**

This appendix provides a summary of the maintenance operations for the AN/PAQ-4B and AN/PAQ-4C. It authorizes levels of maintenance for specific maintenance functions on repairable items and components and the tools and equipment required to perform each function. This appendix may be used as an aid in planning maintenance operations.

#### **B-2. Maintenance Function**

Maintenance functions will be limited to and defined as follows:

**a. Inspect.** To determine the serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

**b. Test.** To verify serviceability and to detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

**c. Service.** Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminate), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

**d. Replace.** The act of substituting a serviceable like type part, subassembly, or module (component or assembly) for an unserviceable counterpart.

**e. Repair.** The application of maintenance services (inspect, test, service, adjust, align, calibrate, replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining, or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or subassembly), end item, or system.

### **B-3. Column Entries**

**a. Column 1, Group Number.** Column 1 lists group numbers, the purpose of which is to identify

components, assemblies, subassemblies, and modules with the next higher assembly.

**b. Column 2, Component/Assembly.** Column 2 contains the names of components, assemblies, subassemblies, and the modules for which maintenance is authorized.

**c. Column 3, Maintenance Functions.** Column 3 lists the functions to be performed on the item listed in column 2. When items are listed without maintenance functions, it is solely for purposes of having the group numbers in the MAC and RPSTL coincide.

**d. Column 4, Maintenance Level.** Column 4 specifies, by the listing of a "work time" figure in the appropriate subcolumn(s), the lowest level of maintenance authorized to perform the function listed in column 3.

This figure represents the active time required to perform that maintenance function at the indicated level of maintenance. If the number or complexity of the tasks within the listed maintenance function vary at different maintenance levels, appropriate "work time" figures will be shown for each level.

The number of task hours specified by the "work time" figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operating conditions. This time includes

preparation time, troubleshooting time, and quality assurance/ quality control time in addition to the time required to perform the specific tasks identified for the maintenance function authorized in the maintenance allocation chart.

Subcolumns of column 4 are as follows:

**UNIT**

C — Operator/Crew

O — Organizational

**INTERMEDIATE**

F — Direct Support

H — General Support

**DEPOT**

D — Depot

**e. Column 5, Tools and Equipment.** Column 5 specifies by code, those common tool sets (not individual tools) and special tools, test, and support equipment required to perform the designated function.

**f. Column 6, Remarks.** Column 6 contains an alphabetic code which leads to the remark in Section IV, Remarks, which is pertinent to the item opposite the particular code.

#### **B-4. Tool and Test Equipment Requirements (Sect. III)**

**a. Tool or Test Equipment Reference Code.** The numbers in this column coincide with the numbers used in the tools and equipment column of the MAC.

**b. Maintenance Level.** The lowest level of maintenance authorized to use the tool or test equipment.

**c. Nomenclature.** Name or identification of the tools and test equipment.

**d. National/NATO Stock Number.** The National/NATO Stock Number of the specific tool or test equipment.

**e. Tool Number.** The manufacturer's part number of the tool.

#### **B-5. Remarks**

**a. Reference Code.** This code refers to the appropriate item in Section II, column 6.

**b. Remarks.** This column provides the required explanation information necessary to clarify items appearing in Section II.

SECTION II MAINTENANCE ALLOCATION CHART  
FOR  
LIGHT, AIMING, INFRARED, AN/PAQ-4B AND AN/PAQ-4C

(1) GROUP NUMBER	(2) COMPONENT/ASSEMBLY	(3) MAINTENANCE FUNCTION	(4) MAINTENANCE LEVEL					(5) TOOLS AND EQPT.	(6) REMARKS
			UNIT		INTERMEDIATE		DEPOT		
			C	O	F	H	D		
00	INFRARED AIMING LIGHT AN/PAQ-4B and AN/PAQ-4C	INSPECT TEST SERVICE REPLACE REPAIR	0.1 0.1 0.1	0.1 0.1				1	A D  B
01	AIMING LIGHT ASSEMBLY	INSPECT TEST SERVICE REPLACE REPAIR	0.1 0.1 0.1	0.1 0.1				1	A D  C
02	BRACKET ASSEMBLY M16A2	INSPECT TEST SERVICE REPLACE REPAIR	0.1 0.1 0.1	0.1 0.1				2	E

**SECTION III. TOOLS AND TEST EQUIPMENT REQUIREMENTS  
FOR AN/PAQ-4B AND AN/PAQ-4C**

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE LEVEL	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NUMBER
1	C,O	NIGHT VISION GOGGLES, AN/PVS-5A AN/PVS-5B AN/PVS-5C AN/PVS-7A AN/PVS-7B	5855-00-150-1820 5855-01-228-0938 5855-01-228-0936 5855-01-228-0939 5855-01-228-0937	
2	C,O	SOCKET HEAD SCREW KEY	5120-01-045-4888	



## SECTION IV. Remarks

REFERENCE CODE	REMARKS
A.	THE GOGGLE USED IN THIS TEST IS TO BE OBTAINED FROM THE UNIT'S CURRENT AUTHORIZATION
B.	REPAIR BY REPLACEMENT OF MOUNTING BRACKETS, TEXTILE BAG, SHIPPING/STORAGE CASE, CABLE SWITCH, CABLE HANGERS, BRACKET ADAPTERS
C.	REPAIR BY REPLACEMENT OF OPTICAL BAFFLE, BATTERY CAP, RETAINING STRAP, AND THUMBSCREW
D.	SERVICE INCLUDES BATTERY REPLACEMENT.
E.	REPAIR BY REPLACING BRACKET, CAPS, MOUNTING RAIL, SCREWS AND WASHERS

# **APPENDIX C REPAIR PARTS AND SPECIAL TOOLS LIST**

## **SECTION I. INTRODUCTION**

### **C-1. Scope**

This manual lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for performance of Unit Maintenance of the AN/PAQ-4B and AN/PAQ-4C. It authorizes the requisitioning, issue, and disposition of spares, repair parts and special tools as indicated by the Source, Maintenance and Recoverability (SMR) codes.

### **C-2. General**

This Repair Parts and Special Tool List is divided into the following sections:

**a. Section II. Repair Parts List.** A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of functional groups in ascending number sequence.

Figure numbers are listed directly beneath the group header.

**b. Section III. Special Tool List.** Not applicable.

### **C-3. Explanation of Columns (Section II and III).**

**a. Item No. (Column (1)).** Indicates the number used to identify items called out in the illustration.

**b. SMR Code (Column (2)).** The Source, Maintenance, and Recoverability (SMR) code is a five-position code containing supply/requisitioning information, maintenance category authorization criteria, and disposition instructions, as shown in the following breakout:

#### **Source Code**

1st two positions

XX



How to get an item.

#### **Maintenance Code**

XX



3rd  
position



4th  
position

Who can install, replace, or use the item.

Who can do complete repair (see note) on the item.

### Recoverability Code

5th position

X



Who determines disposition action on an unserviceable item.

### NOTE

Complete repair: Maintenance capacity, capability, and authority to perform all corrective maintenance tasks of the "Repair" function in a use/user environment in order to restore serviceability to a failed item.

**(1) Source Code.** The source code tells how to get an item needed for maintenance, repair, or overhaul of an end item/equipment. Explanation of source codes follows:

<i>Code</i>	<i>Explanation</i>
PA	Stocked items; use the applicable
PB	NSN to request/requisition items with
PC	these source codes. They are
PD	authorized to the category indicated
PE	by the code entered in the third
PF	position of the SMR code.

## NOTE

Items coded PC are subject to deterioration.

<i>Code</i>	<i>Explanation</i>
XA	Do not requisition an "XA" coded item. Order its next higher assembly.
XB	If an "XB" item is not available from salvage, order it using the CAGEC and part number.

## NOTE

Cannibalization or controlled exchange, when authorized, may be used as a source of supply for items with the above source codes, except for those source coded "XA" or those aircraft support items restricted by requirements of AR 750-1.

**(2) Maintenance Code.** Maintenance codes tell the category of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the SMR code as follows:

- (a)** The maintenance code entered in the third position tells the lowest maintenance category authorized to remove, replace, and use an item. The maintenance code entered in the third position

will indicate authorization to one of the following categories of maintenance.

*Code Application/Explanation*

C — Crew or operator maintenance done within organizational or aviation maintenance.

O — Organizational or aviation unit category can remove, replace and use the item.

**(b)** The maintenance code entered in the fourth position tells whether or not the item is to be repaired and identifies the lowest maintenance category with the capability to do complete repair (i.e., perform all authorized repair functions). This position will contain one of the following maintenance codes.

**NOTE**

Some limited repair may be done on the item at lower category of maintenance, if authorized by the Maintenance Allocation Chart (MAC) and SMR codes.

*Code Application/Explanation*

D — Depot is the lowest category that can do complete repair of the item.

O — Organizational (or aviation unit) is the lowest level that can do complete repair of the item.

Z — Nonreparable. No repair is authorized.

**(3) Recoverability Code.** Recoverability codes are assigned to items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the SMR Code as follows:

*Code    Application/Explanation*

- Z — Nonreparable Item. When unserviceable, condemn and dispose of the item at the category of maintenance shown in the third position of SMR Code.
- O — Repairable Item. When uneconomically repairable, condemn and dispose of the item at organizational or aviation unit level.
- A — Item requires special handling for specific reasons (e.g., precious metal content, high dollar value, critical material, or hazardous material). Refer to appropriate manuals/directives for specific instructions.

**c. NSN (Column (3)).** This column lists the National Stock Number for the associated part number and manufacturer identified in the part number and CAGEC columns to the left.

**d. CAGEC (Column (4)).** The Commercial and Government Entity Code (CAGEC) is a 5-digit numeric code which is used to identify the manufacturer, distributor, or Government agency, etc., that supplies the item.

**e. Part Number (Column (5)).** Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify an item or range of items.

### **NOTE**

When using a NSN to requisition an item, the item received may have a different part number from the part ordered.

**f. Description and Usable on Code (UOC) (Column (6)).** This column includes the following information.

**(1)** The Federal Item name and, when required, a minimum description to identify the item.

**(2)** If the item is not the same for all models, a Usable On Code will appear next to the description. If an item is used on all models of the end item, there will be no Usable On Code listed. These codes are identified below:

<u>CODE</u>	<u>USED ON</u>
JXQ	AN/PAQ-4B
KUL	AN/PAQ-4C



**(3)** The statement "END OF FIGURE" appears just below the last item description.

**g. Quantity (Column (7)).** Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly.

#### **C-4. Special Information**

National stock numbers (NSN's) that are missing from 'P' source coded items have been applied for and will be added to this TM by future changes/revisions when they are entered in the Army Master Data File (AMDF). Until the NSN's are established and published, submit exceptions requisitions to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-MM, Fort Monmouth, NJ 07703-5000 for the part required to support the equipment.

#### **C-5. How to Locate Repair Parts.**

**a. When National stock number or part number is not known:**

**(1) First.** Using the Table of Contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly

groups, and listings are divided into the same groups.

**(2) Second.** Find the figure covering the assembly group or subassembly group to which the item belongs.

**(3) Third.** Identify the item on the figure and note the item number.

**(4) Fourth.** Refer to the Repair Parts List for the figure to find the part number and NSN noted on the figure.

**b. When National stock number or part number is known.**

**(1) First.** Using the Part Number Index, find the pertinent part number.

**(2) Second.** After finding the figure and item number, locate the item number in the repair parts list figure, and verify that the item is the one wanted.

**C-7. Abbreviations.**

Not applicable.

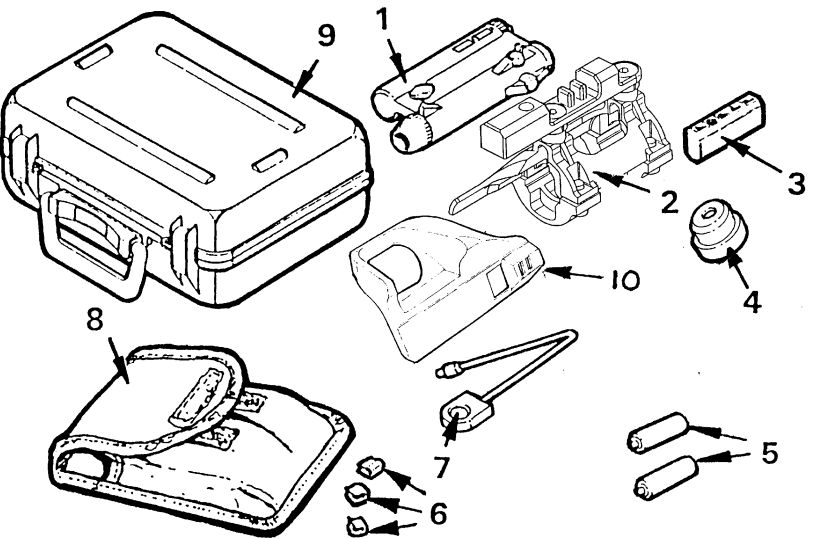


Figure C-1. Light, Aiming, Infrared,  
AN/PAQ-4C.

## SECTION II

TM 11-5855-301-12&amp;P

(1) ITEM NO	(2) SMR CORE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES {WC}	(7) QTY
GROUP 00 LIGHT, AIMING, INFRARED ANPAQ-4B AND ANPAQ-4C						
1	<b>XAOOO</b>		80063	<b>A3187001</b>	AIMING LIGHT ASSY (SEE FIG C-2 FOR PARTS BREAKDOWN)	KUL 1
2	<b>PA000</b>	<b>5340-01-390-3812</b>	80063	A3186958	IAL M4/M16A2 BRACKET ASSY (SEE FIG C-3 FOR PARTS BREAKDOWN)	1
3	<b>PAOZZ</b>	<b>5340-01-362-9873</b>	80063	A3186852	ADAPTER, BRACKET	1
4	PAOZZ	1290-01-438-2530	80063	A3259272	FILTER, BORESIGHTING	1
5	PCOZZ	6135-00-985-7845	4M310	4006B4	BATTERY, NONRECHARGEABLE	2
6	PAOZZ	<b>5975-01-377-2498</b>	<b>80063</b>	<b>A3187008</b>	HANGER, CABLE	3
7	PAOZZ	<b>6150-01-363-2798</b>	80063	A3259273	CABLE ASSEMBLY-SWITCH, ELECTRICAL	1
8	PAOZZ	8105-01-368-6253	80063	<b>A3186949</b>	BAG, TEXTILE	1
9	XBOZZ	1240-01-363-2796	80063	<b>A3136951</b>	CASE, ELECTRONIC COMMUNICATIONS	1
10	<b>PAOZZ</b>	5930-01-447-2698	80063	A3259270	SHROUD, SWITCH LEVER	1
11	<b>PAOZZ</b>	5340-01-448-8648	80063	A3141997	PIN, PUSH	2

END OF FIGURE

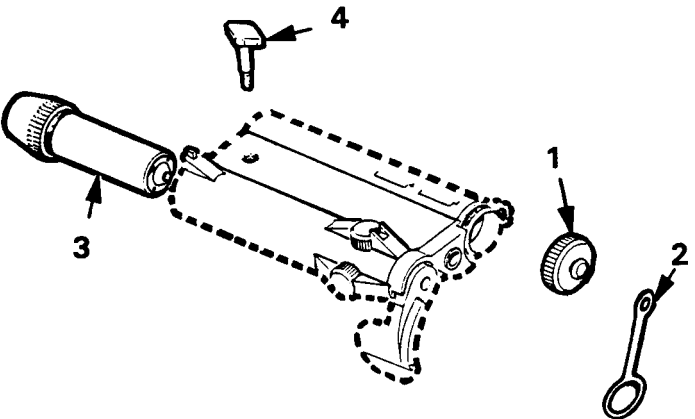
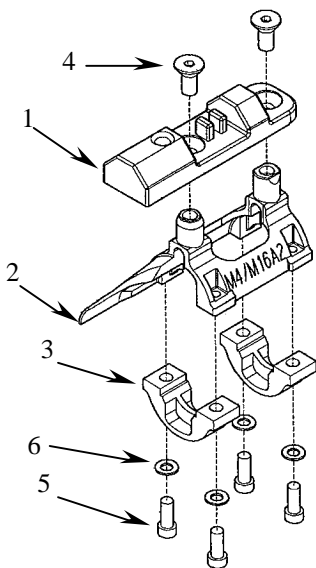


Figure C-2. Aiming Light Assembly.

SECTION II				TM 11-5855-301-12&P		
(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
GROUP 01 AIMING LIGHT ASSEMBLY						
1	PAOZZ	6160-01-378-0517	80063	A3186954	COVER(1), BATTERY BOX	1
2	PAOZZ	5330-01-368-3730	80063	A3139224	STRAP, RETAINING	1
3	PAOZZ	6210-01-362-9867	80063	A3186948	BAFFLE, OPTICAL	1
4	PAOZZ	5305-01-367-6369	80063	A3186978	THUMBSCREW	1
END OF FIGURE						



**Figure C-3. M4/M16A2 BRACKET ASSY.**

## SECTION II

TM 11-5855-301-12&amp;P

(1) ITEM NO	(2) SMR CODE	(3) NSN	(4) CAGEC	(5) PART NUMBER	(6) DESCRIPTION AND USABLE ON CODES (UOC)	(7) QTY
GROUP 02 ASSEMBLY, IAL M4/M16A2 BRACKET						
1		5340-01-669-4221	80063	A3259266	MOUNTING RAIL, IAL	1
2	PAOZZ		80063	A3259271	BRACKET, IAL, M4/M16A2	1
3	PAOZZ	5355-01-369-4223	80063	A3259269	BRACKET CAP, IAL, M16A2	2
4	PAOZZ		80063	A3259268	RAIL MOUNT SCREW, IAL	2
5	PAOZZ	5305-01-349-9568	06725	NA0069-040D08	SHCS, M4x0.7 X 8mm LG	4
6	PAOZZ	5310-01-438-1223	81349	D70336/1-25	WASHER, LOCK M4	4

END OF FIGURE



**RPSTL SECTION III**

**SPECIAL TOOLS LIST**

**(NOT APPLICABLE)**

# **APPENDIX D COMPONENTS OF END ITEM LIST**

## **SECTION I. INTRODUCTION**

### **D-1. Scope**

This appendix lists integral components of the basic issue items for the Light, Infrared Aiming AN/PAQ-4B and AN/PAQ-4C to help inventory items required for safe and efficient operation.

### **D-2. General**

This Components of End Item List is divided into the following sections:

**a. Section II. Integral Components of the End Item.** These items, when assembled, comprise the AN/PAQ-4B and AN/PAQ-4C and must accompany it whenever it is transferred or turned in. The illustrations will help identify these items.

**b. Section III. Basic Issue Items.**

These are the minimum essential items required to place the AN/PAQ-4B and AN/PAQ-4C in operation, to operate it, and to perform emergency repairs.

Although shipped separately packed, they must accompany the end item during operation and whenever it is transferred between accountable officers. The illustrations will assist with hard-to-identify items. This manual is the authority to requisition replacement BII, based on TOE/MTOE authorization of the end item.

### **D-3. Explanation of Columns**

#### **a. Illustration.**

This column is divided as follows:

- (1) Figure number. Indicates the figure's number for the illustration on which the item is shown.
- (2) The number used to identify the item called out in the illustration.

#### **b. National Stock Number.**

Indicates the National Stock Number assigned to the item which will be used for requisitioning.

#### **c. Description.**

Indicates the Federal item name and, if required, a minimum description to identify the item. The part number indicates the primary number used by the manufacturer, which controls the design and characteristics of the item by means of its engineering drawings, specifications, standards, and inspection requirements to identify the item or range of items. Following the part number, the CAGEC is shown in parentheses.

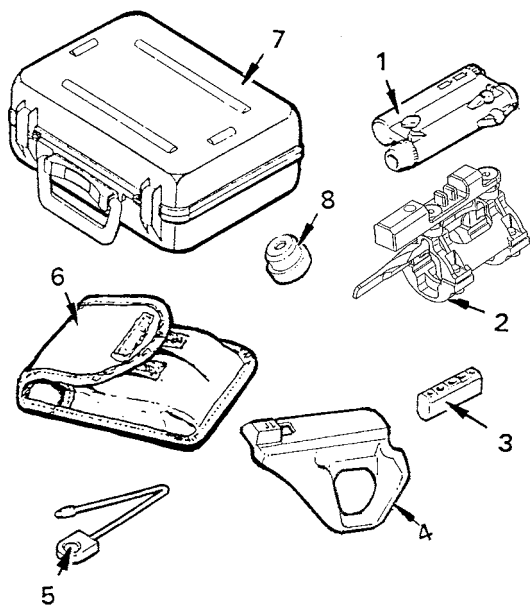
**d. Location.** The physical location of each item listed is given in this column. The lists are designed to inventory all items in one area of the major item before moving on to an adjacent area.

**e. Usable on Code.** If the item is not the same for different models of the equipment, the Usable On Code will be listed in this column. If no Code is listed, then the item is common to all models. The Codes are as identified below:

<u>CODE</u>	<u>USED ON</u>
JXQ	AN/PAQ-4B
KUL	AN/PAQ-4C

**f. Quantity Required (Qty. Rqd).** This column lists the quantity of each item required for a complete major item.

**g. Quantity.** This column is left blank for use during an inventory. Under the Rcvd column, list the quantity actually received on the major item. The Date columns are for use when inventorying the major item.



**Figure D-1. Components of End Item.**

## SECTION II. COMPONENTS OF END ITEM AN/PAQ-4C

(1) ILLUSTRATION		(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION  PART NUMBER (CAGEC)	(4) OCATIO	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY	
(A) FIG NO.	(B) ITEM NO.						RCVD	DATE
D-1	1		LIGHT, AIMING, INFRARED A3187001 80063			1		
D-1	2	5340-01-390-3812	ASSEMBLY, IAL BRACKET A3186958 80063			1		
D-1	3	5340-01-362-9673	ADAPTER, BRACKET A3186952 80063			1		
D-1	4	5390-01-447-2698	SHROUD, SWITCH LEVER A3259270 80063			1		
D-1	5	6150-01-363-2798	ASSEMBLY, STRAPLESS REMOTE SWITCH A3259273 80063			1		
D-1	6	8105-01-368-6253	BAG, TEXTILE A3186949 80063			1		
D-1	7	1240-01-363-2796	CASE, ELECTRONIC COMMUNICATIONS EQUIPMENT A3186951 80063			1		
D-1	8	1290-01-438-2530	ASSEMBLY, BORESIGHTING FILTER A3259272 80063			1		

# ARMY TM 11-5855-301-12&P MARINE CORPS TM 09596C-12&P/1A

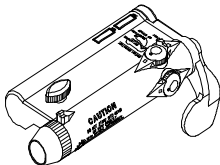
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## TECHNICAL MANUAL

### OPERATOR'S AND UNIT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

LIGHT, AIMING, INFRARED

AN/PAQ-4B  
(NSN 5855-01-361-1362)  
(EIC: N/A)  
AN/PAQ-4C  
(NSN 5855-01-398-4315)  
(EIC: N/A)



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DEPARTMENT OF THE ARMY  
AND HEADQUARTERS, MARINE CORPS  
12 December 1997  
Figure D-2. Basic Issue Items.

### SECTION III. BASIC ISSUE ITEMS, AN/PAQ-4B AND AN/PAQ-4C

(1) ILLUSTRATION		(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION  PART NUMBER (CAGEC)	(4) LOCATION	(5) USABLE ON CODE	(6) QTY REQD	(7) QUANTITY	
(A) FIG NO.	(B) ITEM NO.						RCVD	DATE
D-2	1		TM 11-5855-301-12&P TECHNICAL MANUAL, OPERATOR'S AND UNIT MAINTENANCE MANUAL, (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST), LIGHT, AIMING, INFRARED, AN/PAQ-4B AND AN/PAQ-4C			1		



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# **APPENDIX E ADDITIONAL AUTHORIZATION LIST**

## **SECTION I. INTRODUCTION**

### **E-1. Scope**

This appendix lists additional items you are authorized for the support of the AN/PAQ-4B and AN/PAQ-4C.

### **E-2. General**

This list identifies items that do not have to accompany the AN/PAQ-4B and AN/PAQ-4C and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

### **E-3. Explanation of Listing**

National Stock Numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment.

## SECTION II. ADDITIONAL AUTHORIZATION LIST, AN/PAQ-4C

(1) NATIONAL STOCK NUMBER	(2) DESCRIPTION  PART NUMBER (CAGEC)	(3) UNIT OF MEASURE  USABLE ON CODE	(4) QTY AUTH
5855-01-046-7272	MOUNTING BRACKET ASSY, M60 SM-D-850340-1 80063	E A	1
5340-01-387-0866	MOUNTING BRACKET ASSY, M249 A3187016 80063	E A	1
5855-01-045-5482	MOUNTING BRACKET ASSY, M2 SM-D-850220-1 80063	E A	1
5855-01-446-9545	MOUNTING BRACKET ASSY, M16A2 A3259265 80063	E A	1
5340-01-363-2797	MOUNTING BRACKET ASSY. M16A1/A2 A3186950 80063	E A	1
6150-01-363-2798	CABLE ASSEMBLY SWITCH ELECTRICAL A3186960 80063	E A	1
5340-01-368-5076	BARREL ADAPTER, M16A1 A3186968 80063	E A	1
	MOUNTING BRACKET ASSY, M136 (AT4)	E A	1
	ASSY, BRACKET, RAIL GRABBER ITP-090 0B107	E A	1
	TRAINING EXTENDER A3267739 80063	E A	1

# APPENDIX F

## EXPENDABLE AND DURABLE ITEMS LIST

### SECTION I.

#### INTRODUCTION

##### **F-1. Scope**

This appendix lists expendable and durable items needed to operate and maintain the AN/PAQ-4B and AN/PAQ-4C. These items are authorized by CTA 50-790, Expendable/Durable Items.

##### **F-2. Explanation of Columns**

**a. Column 1. Item Number.** This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., "Use cleaning compound, item 5, Appendix F").

**b. Column 2. Level.** This column identifies the lowest level of maintenance that requires the listed item.

**c. Column 3. National Stock Number.** This is the national stock number assigned to the item, which you can use to requisition it.

**d. Column 4. Item Name, Description, Commercial and Government Entity Code (CAGEC) and Part Number.** This provides the other information you need to identify the item.

**e. Column 5. Unit of Measure.** This code shows the physical measurement or count of an item.

## SECTION II. EXPENDABLE AND DURABLE ITEMS LIST

(1) ITEM NO.	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION  PART NO. AND CAGEC	(5) UNIT OF MEAS
1	C	6515-00-303-8250	APPLICATOR, DISPOSABLE 30-011 02773	PG
2	C	5975-01-377-2498	HANGER, CABLE A3187008 80063	EA
3	C	6810-01-975-5546	ALCOHOL, ISOPROPYL 7618-19-4 53390	BT
4	C	6135-00-985-7845	BATTERY, NON-RECHARGEABLE, ALKALINE AA W-B-101 CLASS 12	EA

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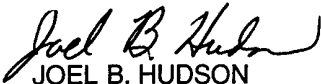
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# THE METRIC SYSTEM AND EQUIVALENTS

## WEIGHT MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches  
 1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches  
 1 Kilometer = 1000 Meters = 0.621 Miles

## WEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces  
 1 Kilogram = 1000 Grams = 2.2 lb.  
 1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

## LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces  
 1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

## SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches  
 1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet  
 1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

## CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches  
 1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

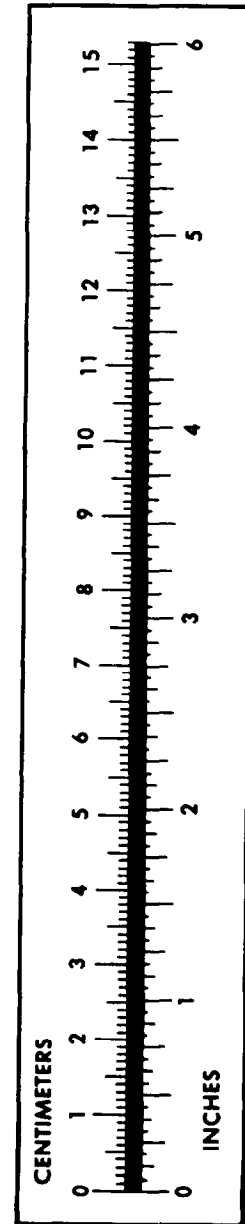
## TEMPERATURE

$5/9(^{\circ}\text{F} - 32) = ^{\circ}\text{C}$   
 212° Fahrenheit is equivalent to 100° Celsius  
 90° Fahrenheit is equivalent to 32.2° Celsius  
 32° Fahrenheit is equivalent to 0° Celsius  
 $9/5^{\circ}\text{C} + 32 = ^{\circ}\text{F}$

## APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
its	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
ometers per Liter	Miles per Gallon	2.354
ometers per Hour	Miles per Hour	0.621



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